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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XG300

2018 Marine Mammal Stock Assessment Reports

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; response to comments.

SUMMARY: As required by the Marine Mammal Protection Act (MMPA), NMFS has considered public comments for revisions of the 2018 marine mammal stock assessment reports (SARs). This notice announces the availability of 46 final 2018 SARs that were updated and finalized.

ADDRESSES: Electronic copies of SARs are available on the Internet as regional compilations at the following address: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>.

A list of references cited in this notice is available at www.regulations.gov (search for docket NOAA-NMFS-2018-0086) or upon request.

FOR FURTHER INFORMATION CONTACT: Lisa Lierheimer, Office of Protected Resources, 301-427-8402, Lisa.Lierheimer@noaa.gov; Marcia Muto, 206-526-4026, Marcia.Muto@noaa.gov, regarding Alaska regional stock assessments; Elizabeth Josephson, 508-495-2362, Elizabeth.Josephson@noaa.gov, regarding Atlantic, Gulf of

Mexico, and Caribbean regional stock assessments; or Jim Carretta, 858-546-7171, Jim.Carretta@noaa.gov, regarding Pacific regional stock assessments.

SUPPLEMENTARY INFORMATION:

Background

Section 117 of the MMPA (16 U.S.C. 1361 *et seq.*) requires NMFS and the U.S. Fish and Wildlife Service (FWS) to prepare stock assessments for each stock of marine mammals occurring in waters under the jurisdiction of the United States, including the U.S. Exclusive Economic Zone (EEZ). These reports must contain information regarding the distribution and abundance of the stock, population growth rates and trends, estimates of annual human-caused mortality and serious injury (M/SI) from all sources, descriptions of the fisheries with which the stock interacts, and the status of the stock. Initial reports were completed in 1995.

The MMPA requires NMFS and FWS to review the SARs at least annually for strategic stocks and stocks for which significant new information is available, and at least once every three years for non-strategic stocks. The term “strategic stock” means a marine mammal stock: (A) for which the level of direct human-caused mortality exceeds the potential biological removal level or PBR (defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population); (B) which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act (ESA) within the foreseeable future; or (C) which is listed as a threatened species or endangered

species under the ESA. NMFS and the FWS are required to revise a SAR if the status of the stock has changed or can be more accurately determined. NMFS, in conjunction with the Alaska, Atlantic, and Pacific independent Scientific Review Groups (SRG), reviewed the status of marine mammal stocks as required and revised reports in the Alaska, Atlantic, and Pacific regions to incorporate new information.

The period covered by the 2018 SARs is 2012-2016. NMFS updated SARs for 2018, and the revised draft reports were made available for public review and comment for 90 days (83 FR 47137, September 18, 2018). NMFS received comments on the draft 2018 SARs and has revised the reports as necessary. This notice announces the availability of 46 final 2018 reports that were updated. The new individual draft report for the West Bay stock of common bottlenose dolphin stock was not finalized (see below). The final reports are available on NMFS' website (see **ADDRESSES**).

Withdrawal of the West Bay Common Bottlenose Dolphin SAR

NMFS is in the process of writing separate stock assessment reports for each of the 31 individual stocks contained in the Northern Gulf of Mexico Bay, Sound, and Estuary common bottlenose dolphin report. For the draft 2018 SARs, 2 new individual reports were completed separating out the West Bay and Terrebonne-Timbalier Bay Estuarine System stocks from the larger report. However, we are not finalizing the new individual report for the West Bay common bottlenose dolphin stock because the abundance estimate for this stock is based on a publication that is still currently in review (Litz *et al.*, in review). NMFS will include the updated abundance estimate for the West Bay stock in the draft 2019 report, once the Litz *et al.* publication is in press or has been

published. To date, we have completed individual reports for five bottlenose dolphin stocks (Terrebonne-Timbalier Bay Estuarine System, Barataria Bay Estuarine System, Mississippi Sound/Lake Borgne/Bay Boudreau, Choctawhatchee Bay, and St. Joseph Bay). The remaining 26 stocks are included in the Northern Gulf of Mexico Bay, Sound, and Estuary Stocks report.

Comments and Responses

NMFS received letters containing comments on the draft 2018 SARs from the Aleut Community of St. Paul Island Tribal Government; the Makah Tribe; the Marine Mammal Commission; the North Slope Borough; 11 non-governmental organizations (Alaska Oil and Gas Association, Center for Biological Diversity, Conservation Law Foundation, Defenders of Wildlife, Friends of the Children's Pool, Hawaii Longline Association, The Humane Society of the United States, Oceana, Point Blue Conservation Science, Southern Environmental Law Foundation, and Whale and Dolphin Conservation); and 3 individuals. Responses to substantive comments are below; comments on actions not related to the SARs are not included below. Comments suggesting editorial or minor clarifying changes were incorporated in the reports, but they are not included in the summary of comments and responses. In some cases, NMFS' responses state that comments would be considered or incorporated in future revisions of the SARs rather than being incorporated into the final 2018 SARs.

Comments on National Issues

Minimum population estimates

Comment 1: The Marine Mammal Commission (Commission) comments the requirements of Section 117 of the MMPA require inclusion of a minimum population estimate (N_{min}), a key factor for effective management of marine mammal stocks using PBR. Without an N_{min} derived from recent data, PBR cannot be calculated and an “undetermined” value results, which is useless for management purposes. Including the revised 2018 draft SARs, an N_{min} estimate is lacking for 91 of the 251 identified stocks (or 36 percent). The Commission understands that the primary reason for this shortcoming is a lack of resources (mainly access to vessel and plane platforms from which surveys are conducted) to collect the necessary information. The Commission appreciates the efforts NMFS has made to address this shortcoming by setting priorities across regions, coordinating requests for vessel time, and maximizing the data collected during these surveys (*e.g.* Ballance *et al.* 2017). The Commission recommends that NMFS continue its efforts to prioritize and coordinate requests to secure the necessary survey resources across regions. In addition to these internal efforts, the Commission acknowledges and encourages NMFS’ continued engagement and collaboration with other federal agencies that also require basic information on marine mammal stocks, through programs like the Atlantic Marine Assessment Program for Protected Species and similar programs in the Gulf of Mexico and the Pacific. Further, the Commission recommends that these marine assessment programs continue to include appropriate personnel, logistical capability, and vessel time to allow for photo-identification, biopsy sampling, satellite tagging and other efforts to augment and increase the value of the core line-transect survey data collected. These additional efforts will assist in delineating stock

structure, confirming at-sea identification of cryptic species, and furthering understanding of marine mammal distribution, habitat use, and behavior, all important to the overall management goals of NMFS under the MMPA.

Response: We acknowledge the Commission's comment and will continue to prioritize our efforts for the collection of data to address outdated Nmin estimates.

Fisheries observer coverage

Comment 2: The Commission points out that adequate observer coverage continues to be an issue for many fisheries in most regions. In some cases, fisheries that have the potential to take marine mammals go unobserved entirely. For example, in Hawaii, several unobserved, state-managed line fisheries likely interact with endangered main Hawaiian Islands insular false killer whales. In Alaska, numerous unobserved, state-managed salmon gillnet fisheries pose a significant risk of interactions with harbor porpoises. In other cases, observed fisheries with known interactions with marine mammals have observer coverage but is inadequate (*e.g.*, less than 10 percent). Observer coverage in the Category I Mid-Atlantic gillnet fishery, which is known to take significant numbers of common bottlenose dolphins, common dolphins, and harbor porpoises, averaged less than five percent from 2012 to 2016. On the positive side, annual coverage increased steadily from two to eight percent over that period. Observer coverage in the Category II Mid-Atlantic bottom trawl fishery averaged under eight percent coverage over the same period, although once again annual coverage increased from five to ten percent during that period. The Commission recommends that NMFS continue to increase observer coverage in all fisheries with significant marine mammal

bycatch that lack adequate coverage to provide reliable estimates of incidental take levels, with increased efforts to develop collaborative observer programs for state-managed fisheries, particularly in Alaska and Hawaii.

Response: NMFS is charged with fulfilling a wide range of requirements under the Magnuson-Stevens Act, MMPA, and ESA, and regulations implementing those Acts. These mandates include ending overfishing and rebuilding fish stocks, protecting and recovering threatened and endangered species, reducing bycatch, enforcing laws and regulations, and combating illegal, unreported, and unregulated fishing internationally. In recent years, we have tried to meet performance goals ensuring that at least 38 U.S. fisheries continue to maintain adequate observer coverage through the deployment of at least 70,000 sea days observed nationwide. Allocation of observer coverage involves a variety of trade-offs that prevent each fishery from being observed each year, or at high levels of coverage.

In the case of the Hawaii line fisheries mentioned by the Commission, those fisheries are all Category III fisheries in the MMPA List of Fisheries (LOF). According to the 2018 LOF, only the Hawaii troll fishery has had documented marine mammal species and stocks incidentally killed or injured. In light of the high-priority marine mammal interactions in the Category I Hawaii deep-set longline fishery and the Category II Hawaii shallow-set longline fishery and American Samoa longline fishery, and limited observer budget resources, the Hawaii line fisheries cited by the Commission are not prioritized for coverage at this time.

While we are not operating the Alaska Marine Mammal Observer Program (AMMOP) due to lack of available resources to fund additional observations of the southeast Alaska salmon driftnet fishery, we are working to assess the needed resources and actively exploring options to identify additional resources for the AMMOP.

Coverage rates for the Category I Mid-Atlantic gillnet fishery are limited both by funding and practical limitations, although observer coverage has continued to increase in recent years. Obtaining higher coverage is challenging due to the geographically dispersed nature of this fishery. In 2017, the observer coverage for this fishery was 9.36 percent and generally higher in strata where marine bycatch occurred. Despite having observer coverage rates of 5 to 10 percent from 2012-2016, the Category II Mid-Atlantic bottom trawl fishery generally has observer coverage required to meet the target of a 30 percent coefficient of variation (CV) for marine mammal mortality estimates in that fishery. In light of the fact that the 30 percent CV target is generally being met with 5 to 10 percent observer coverage, increasing observer coverage for this fishery is not a high priority given limited observer budget resources.

Review of SARs for strategic stocks

Comment 3: The Commission comments that Section 117 of the MMPA directs NMFS to review at least annually, all stock assessment reports for strategic stocks. How NMFS addresses this requirement varies by region. For example, the 2018 draft reports for Alaska include proposed revisions, some minor, to the reports for all strategic stocks. While the other regions may have reviewed each strategic stock in 2018, not every strategic stock was revised and released for public comment. Some strategic stocks have

SARs that have not been updated in more than five years, presumably because no significant new information has been published on abundance, distribution, human-caused serious injury and mortality, stock structure or habitat concerns for those stocks. To help ensure NMFS is aware of new information relevant to all strategic stocks, the Commission recommends that NMFS include in the *Federal Register* notice, published when revised SARs are released, a specific request for new information for strategic stocks that were not updated that year. New relevant information could include peer-reviewed information on human-caused serious injury and mortality, fishery interactions, abundance, distribution, stock structure and habitat concerns, which could be incorporated into SARs, and other information that might draw attention to emerging concerns for a strategic stock.

Response: We appreciate the Commission's recommendation and will include in future *Federal Register* notices regarding draft stock assessment reports a request for new information relevant to all strategic stocks not updated in the current year.

Reconciling humpback whale distinct population segments (DPSs) and MMPA stocks

Comment 4: The Commission expresses concern that NMFS' review of the stock structure of humpback whales under the MMPA in light of the 14 DPSs identified under the Endangered Species Act (81 FR 62259, September 8, 2016) has now been underway for two years with no timetable for its completion. They state the lack of reconciliation between humpback DPSs and humpback stocks has had effects on other management decisions undertaken by NMFS, such as those related to the proposed draft negligible impact determination for the California thresher shark/swordfish drift gillnet fishery (<14

inch mesh) and the Washington/Oregon/California sablefish pot fishery, and those related to its response to the increased number of humpback whale entanglements on the west coast since 2014. The Commission recommends that NMFS take the necessary steps to conclude its review of humpback whale stock structure and revise the humpback whale SARs accordingly in the draft 2019 reports.

The Center for Biological Diversity, Humane Society of the United States, and Whale and Dolphin Conservation (CBD-HSUS-WDC) ask NMFS to elaborate on the status of the agency-wide moratorium on revising MMPA stock definitions and Point Blue Conservation Science expresses support for NMFS to clarify how the DPSs will be treated under the MMPA as quickly as possible.

Response: As described in our *Federal Register* notice requesting comments on the Draft 2017 Marine Mammal Stock Assessment Reports (82 FR 60181, December 19, 2017), we are currently in the process of reviewing stock structure under the MMPA for all humpback whales in U.S. waters, following the change in ESA listing for the species in 2016, to determine whether we can align the stocks with the DPSs under the ESA. Until such time that the humpback whale stock structure under the MMPA with respect to the ESA listing has been completed, we are retaining the current stock delineations and any changes in stock delineation or MMPA section 117 elements (such as PBR or strategic status) will be reflected in future stock assessment reports. Revising the stock structure for humpback whales is a high priority; however, the process of reviewing stock structure under the MMPA has taken longer than anticipated because we are evaluating the Agency's process for stock designation.

Nmin and PBR

Comment 5: The Alaska Oil and Gas Association (AOGA) comments the draft assessment for the Bering Sea stock of harbor porpoise is an example of long-standing inadequacy in the development of Nmin and PBR for stocks with abundance estimates older than eight years. As a result of applying the guidelines for preparing the SARs, NMFS does not use abundance estimates older than eight years to calculate either Nmin or PBR due to a decline in confidence in the reliability of an aged abundance estimate. Both Nmin and PBR are considered “undetermined” or “unknown” which AOGA asserts is a mischaracterization that makes using SARs for permitting and management decisions very difficult. They suggest if Nmin can be identified, even from a survey that is outdated, it should be used to calculate PBR using the best available science. This approach seems analogous to the practice of under-estimating a PBR based on a recent survey which covers only a portion of an animal’s total range. AOGA recommends that the guidelines for preparing the SARs be revisited and even if the “eight-year rule” remains the threshold for estimating Nmin and developing current PBRs, the SAR should identify the most recent data and an estimate of PBR that results from those data. If necessary, the SAR can provide caveats regarding the data and include statements to acknowledge the potential risks of using such data. They comment this is a more reasonable approach than stating that “PBR is considered unknown.”

Response: The topic of outdated abundance information was discussed at the 2011 workshop on the Guidelines for Assessing Marine Mammal Stocks (GAMMS). We proposed revisions to the GAMMS in 2012, including an approach to address outdated

abundance estimates developed at the 2011 workshop. Due to the strenuous objections to the proposed approach received during public comment, we did not implement any changes regarding outdated abundance estimates at that time. We are currently working to develop an alternative approach, which would be included in the next revision of the guidelines. We will solicit public review and comment on any proposed revisions.

Comments on Alaska Issues

Alaska Native subsistence takes

Comment 6: The Commission comments that accurate information on the taking of marine mammals by Alaska Natives for subsistence and handicraft purposes is becoming increasingly important in light of the pace of climate changes occurring in the Arctic and sub-Arctic regions. Over the past several years, the Commission has repeatedly recommended that NMFS, in collaboration with its co-management partners, improve its monitoring and reporting of subsistence hunting in Alaska. The Commission appreciates the efforts made by NMFS in this regard with an increase in the 2018 draft SARs in the number of communities reporting hunting levels for bearded and ribbon seals (from 12 to 16 villages for the most recent five years). Nevertheless, this still represents only one-quarter of the 64 communities that may hunt ice seals. Therefore, the Commission continues to recommend that NMFS pursue additional mechanisms to gather reliable information on the numbers of marine mammals taken for subsistence and creating handicrafts, including by securing adequate funding for comprehensive surveys of subsistence use and Native hunting effort. The Commission encourages NMFS to

continue to provide updated information whenever it becomes available, even if it pertains only to a limited number of villages or a subset of years.

Response: We agree that it would be beneficial to have more comprehensive information about the harvest numbers of species of Alaska marine mammals taken for subsistence purposes and for creating handicrafts. We provide co-management funding to Alaska Native organizations under section 119 of the MMPA, in part to monitor harvests and report harvest numbers. The best available information is more comprehensive for some species (*e.g.*, bowhead whales, beluga whales, and northern fur seals) than for others (*e.g.*, harbor seals and ice seals). The shortcomings reflect the limited resources available to support harvest monitoring and reporting, as well as the large number of communities over a wide geographic area that subsistence hunt for species such as harbor seals, ice-associated seals, and Steller sea lions. Within the constraints of appropriations, we will continue to work with our co-management partners to monitor subsistence harvests and make that information publicly accessible as it becomes available.

Prey availability

Comment 7: Oceana points out that in addition to estimating direct human-caused mortality, for a strategic stock, the SAR must identify “other factors that may be causing a decline or impeding recovery of the stock, including effects on marine mammal habitat and prey.” They note that NMFS has not assessed the impacts of prey levels on strategic stocks, such as whether, or how, commercial fishing or any other factor may be decreasing the availability of prey and, consequently, causing declines or impeding

recovery of strategic stocks and they request that NMFS assess how prey availability may be affecting humpback whale, Steller sea lion, and northern fur seal stocks.

Response: Overall, the NMFS Guidelines for Preparing Stock Assessment Reports (NMFS 2016) state if substantial habitat issues are important for strategic stocks, then a “Habitat” section should be used to summarize the existing data that indicate a problem. The guidelines also note that the SARs are not intended to be a forum in which to present significant new data and analysis. Instead, analyses are to be conducted and published separately, and such an analysis is not part of the SAR process itself.

There is no comprehensive information about how prey availability may be affecting humpback whale stocks. To address this question would require accurate data on prey abundance across the whales’ entire range, prey consumption rates for individuals and populations, energetics of individual whales, and spatial and species overlap with commercial fishery catches. While the latter might be quantifiable, there is currently no way to obtain any reasonable data for the other variables involved, *let alone* for the impact of changing environmental conditions on prey distribution and abundance.

The overall trend for most humpback whale populations found in U.S. waters is positive and points toward recovery (81 FR 62259; September 8, 2016), indicating that prey availability is not a major problem. However, a sharp decline in observed reproduction and encounter rates of humpback whales from the central North Pacific between 2013 and 2018 has been related to oceanographic anomalies and consequent impacts on prey resources (Cartwright *et al.* 2019), suggesting that humpback whales are vulnerable to major environmental changes.

The Western U.S. Steller sea lion SAR does summarize representative publications describing such potential threats in the “Habitat Concerns” section. It is also noted in the “Current Population Trend” section that the decline in pup abundance in the central Gulf of Alaska in 2017 was correlated with a dramatic decline in the abundance of Pacific cod in the area during the winter. There are no available data that definitively tie this decline to a drop in natality but the relationship is implied. As relevant studies become available they will be cited in future SARs.

A 3-year study to address whether prey availability during the breeding season may be a factor affecting Eastern Pacific northern fur seal recovery was initiated in 2018 by NMFS, in collaboration with the University of Washington and with support from the Lenfest Ocean Program. Study results, when published, will be cited in future SARs if relevant.

Steller sea lion, Western Distinct Population Segment

Comment 8: Oceana suggests the population trend, stock status, and habitat concern sections of the Steller sea lion assessment include a discussion on the observations and implications of localized extirpation of breeding sea lions from historical habitats.

Response: Under the MMPA, stock status is determined relative to the entirety of a stock. Steller sea lion population trend estimates are shown in the SAR by subregions to highlight trend differences, but these are not management units under the MMPA. Implications of declines in various regions within the western stock are discussed in context of population recovery under the ESA in the Steller Sea Lion Recovery Plan.

Comment 9: Oceana recommends that an assessment of mitigation measures for recovery of the Steller sea lion population in the Pribilof region is needed because climate change is a threat to Steller sea lions and their habitat and there have been several unusual mortality events in the last decade documented for marine mammals in Alaska. They note that Steller sea lion pup counts in the central and eastern Gulf of Alaska in 2017 were subsequently lower than prior years, indicating that prey availability from the warm conditions decreased pup production.

Response: There have been three Unusual Mortality Events (UMEs) declared in Alaska since 1991 (large whales in 2015; ice seals (ringed, bearded, and spotted) in 2011; and sea otters in 2006). Consistent with our response to Comment 8, the Pribilof population of Steller sea lions is within the western stock of Steller sea lions, so it is not assessed separately in the current SAR. We will cite published studies that discuss the potential consequences of climate change and harmful algal blooms on western Steller sea lions in the “Habitat Concerns” section of future SARs if we determine that these changes in the Alaska coastal environment are of concern for the western Steller sea lion stock.

Comment 10: Oceana comments that while the draft SARs include annual mortality and serious injury rates from federally-managed commercial fisheries monitored and reported by groundfish fisheries observers, these observer data are limited and there are only partial observer data in some of the trawl fisheries (*e.g.*, Gulf of Alaska flatfish trawl, Gulf of Alaska pollock trawl, and Gulf of Alaska Pacific cod trawl fisheries). As a result, they point out the majority of fishing activity, and the possible

marine mammal interactions through that activity, are without monitoring or accountability. What is reported in the SARs is a yearly estimate, with unreported variance, extrapolated from observer data, which makes it difficult to evaluate the accuracy of those marine mammal mortality estimates. They recommend it would benefit marine mammal monitoring to have higher rates of observer coverage on fisheries that potentially interact with endangered species like the western DPS Steller sea lion.

Response: Estimates of variance are reported as CVs and are consistently available for Alaska commercial groundfish fisheries that host fisheries observers. In the current SARs, CVs are reported for the estimates of mean annual mortality and serious injury rates. We will consider including the CVs for the yearly estimates of mortality and serious injury in future SARs; however, these CVs would only describe the uncertainty in the extrapolated estimates of mortality and serious injury based on observer data from randomly-selected monitored hauls; it is not possible to calculate CVs for mortality and serious injury from opportunistic data (*e.g.*, those collected from non-randomly selected hauls). The CVs for many observed fisheries are low because the proportion of the fleet that is observed is quite high. It is accurate that many Alaska fisheries that are known to have mortality and serious injury are observed at a low rate or are not observed at all. In general, the annual rates of mortality and serious injury reflected in the SARs are considered a minimum estimate for each stock. In Alaska, we place observers through an Annual Deployment Plan, which allows for flexibility as the priorities for observations change. We intend to observe state fisheries with at least an occasional level of mortality and serious injury of marine mammals if resources become available.

Northern fur seal, Eastern Pacific

Comment 11: Oceana recommends the northern fur seal assessment include an estimate of the direct or indirect mortality and loss of production that occurs from competition with commercial fisheries. The Aleut Community of St. Paul Island Tribal Government (ACSPI) requests that NMFS include an estimation of commercial fisheries' impacts on the Eastern Pacific stock's population, habitat, and prey through removal of prey or provide an explanation as to why it is not included.

Response: See response to Comment 7.

Comment 12: ACSPI comments the MMPA requires that NMFS "describe commercial fisheries that interact with the stock, including...the estimated level of incidental mortality and serious injury of the stock by each such fishery on an annual basis [and] seasonal or area differences in such incidental mortality or serious injury..." They note that NMFS does not include estimates of incidental mortality from reduction in prey in the appendices that include these descriptions.

Response: See response to Comment 7. Also, note that reduction in prey is not defined as an "incidental mortality" in the MMPA; incidental mortality is defined as mortality incidental to direct human activities.

Comment 13: AOGA notes the draft northern fur seal, Eastern Pacific SAR refers to the pup harvests on St. George Island from 2014 through 2016, and a total of 157 pups were killed over that period. The SAR states that there is no reason to believe that limiting mortality and serious injury to the level of the PBR will reverse the decline. They suggest the report would benefit from adding a brief explanation of the scientific analysis

used to justify changes in the fur seal subsistence harvest regulations and any potential impacts as described in the recent Final Environmental Impact Statement published by NMFS (<https://www.fisheries.noaa.gov/action/notice-availability-final-supplemental-environmental-impact-statement>).

Response: We agree that the statement referenced by the commenter is unclear. The full sentence in the draft SAR stated: “However, given that the population is declining for unknown reasons, and this decline is not explained by the relatively low level of known direct human-caused mortality and serious injury, there is no reason to believe that limiting mortality and serious injury to the level of the PBR will reverse the decline.” We have replaced this sentence with the following sentence in the final 2018 SAR: “The PBR calculation assumes mortality is evenly distributed across males, females, and each age class; but that is not the case with the subsistence harvest, which accounts for most of the known direct human-caused mortality. The subsistence harvest is almost entirely sub-adult males and male pups and, therefore, has a relatively low impact on the population due to the disproportionate importance of females to the population. Thus, non-breeding male-biased mortality up to the maximum levels authorized for subsistence use does not represent a significant risk to the Eastern Pacific northern fur seal stock.” This issue is described in more detail in the recent Final Environmental Impact Statement cited by the commenter.

Ringed seal

Comment 14: AOGA notes that information and updates on the Alaska stock of the ESA-listed Arctic subspecies of ringed seal are not provided in the 2018 SAR. Ringed

seals are the most abundant marine mammal species in the Arctic throughout the year, and a species of major concern related to ongoing oil and gas activities in the U.S. Beaufort Sea and they are unclear why the report for this “strategic” stock was not reviewed and updated.

Response: The Alaska stock of ringed seals was listed as threatened under the ESA on December 28, 2012 (77 FR 76706). On March 11, 2016, the U.S. District Court for the District of Alaska issued a decision vacating the listing. A notice of appeal of the District Court decision was filed on May 3, 2016; and the listing was reinstated on May 15, 2018. Because the stock was not listed as threatened under the ESA or considered to be strategic under the MMPA when the draft 2018 SARs were prepared, we did not revise the ringed seal SAR in 2018; however, we will revise the SAR in 2019.

Beluga whale, Cook Inlet

Comment 15: AOGA recommends NMFS include information in the beluga whale, Cook Inlet report that due to their continued small population size, the Yakutat Bay beluga whales remain part of the Cook Inlet stock and are still provided the same protections as the Cook Inlet stock including the limitations on hunting.

Response: We have added this information to the final 2018 Cook Inlet beluga whale SAR.

Comment 16: AOGA notes the draft Cook Inlet beluga whale SAR does not include the 164 observed dead stranded whales between 1998-2013 identified in the December 2016 Cook Inlet beluga whale ESA Recovery Plan. They suggest the average,

unexplained mortality during this period of approximately 11 beluga whales per year may provide important context for the lack of recovery of this species.

Response: The mortality observed between 1998 and 2013 (Burek-Huntington *et al.* 2015) is described in detail in the “Other Mortality” section of the Cook Inlet beluga whale SAR. We will add information about this observed mortality to the Status of Stock section of the draft 2019 SAR.

Harbor porpoise, Southeast and other Alaska stocks

Comment 17: The Commission expresses concern there remains appreciable uncertainty in the calculated PBR and estimated M/SI levels for the Southeast Alaska (SEAK) harbor porpoise stock due to: (1) low observer coverage, (2) biased population estimates, and (3) insufficient data on stock delineation. In their comments on the 2017 draft SARs, the Commission recommended that NMFS address these uncertainties and although NMFS is working to understand and reduce the uncertainties, no significant changes were made in the 2018 draft SAR. The Commission urges NMFS to continue its efforts to address these issues.

Response: The PBR level of 12 for the Southeast Alaska harbor porpoise stock was estimated based on a survey that covered only a portion of the currently-recognized distribution of this stock, and it includes commercial fishery mortalities or serious injuries that occurred far north of the surveyed areas. We are concerned about the Southeast Alaska harbor porpoise stock and are collecting additional information on stock structure and abundance to reduce uncertainties in the data available to manage this

stock, and we have prioritized the Southeast Alaska drift gillnet fishery for additional observer coverage should resources become available.

Comment 18: The Commission notes the MMPA requires NMFS to develop and implement take reduction plans (TRPs) for all strategic stocks (section 118(f)(1)) that interact with a Category I or II fishery, subject to the availability of funding (section 118(f)(3)). Further, the MMPA directs NMFS to give the highest priority to developing and implementing TRPs for stocks for which M/SI exceeds PBR, the population size is small, and/or the population is declining rapidly. Although the SEAK stock of harbor porpoise meets the first two criteria, NMFS has not yet chosen to develop a TRP for this stock. Given the small size of the stock and the fact that it is experiencing an unsustainable level of take, the Commission recommends that NMFS apply the criteria under section 118(f)(3) to give this stock high priority, establish a take reduction team (TRT), and initiate the development of a TRP. The Commission recognizes that TRTs require a minimum of information regarding population size, status, fisheries interactions, and mitigation options to develop TRP recommendations. In this case, based on what is known about this and other harbor porpoise stocks, their interactions with gillnet fisheries in the eastern United States and Europe, and the availability of approaches to reduce bycatch numbers (*e.g.*, Bjørge *et al.* 2013, Orphanides and Palka 2013, Read 2013, Reeves *et al.* 2013), the Commission believes NMFS has sufficient information to proceed.

Response: As we have noted in our response to Comment 17, we are actively working to collect and analyze data needed to assess this stock. As the Commission

rightly points out, a minimum amount of data and analyses are needed to support TRT deliberations; we are endeavoring to collect those data and provide those analyses. Further, MMPA section 118(f)(3) notes that we prioritize based on availability of funding and are currently implementing several other TRTs that address higher priority stocks and fisheries where the TRPs are not yet meeting MMPA goals (*e.g.*, ESA-listed North Atlantic right whales, Hawaii pelagic false killer whales, and Northern and Southern North Carolina Estuarine System bottlenose dolphins).

Comment 19: The Commission recommends that NMFS undertake analyses using harbor porpoise population data and state gillnet fisheries data from throughout the range of harbor porpoises in Alaska, and bycatch-rate data from comparable harbor porpoise populations from the full range of the species, to develop model-based estimates of the likely magnitude of harbor porpoise bycatch in the Gulf of Alaska and Bering Sea.

Response: We will investigate the feasibility of conducting the analyses recommended by the Commission with existing abundance data for these stocks; however, because the abundance data were collected between 1997 and 1999, the analyses would be based on 20-year-old data that may not reflect the current status of the population.

Humpback whale, Central North Pacific

Comment 20: CBD-HSUS-WDC request that NMFS include in the Central North Pacific (CNP) humpback whale report the data presented and discussed at the November 2018 workshop that showed a decrease in Hawaii in overall humpback whale songs and a drop of nearly 80 percent in sightings of mother and calf pairs from 2014 to 2018.

Response: At the time the draft 2018 SARs were made available for public comment, no published information was available on this apparent change in winter distribution. NMFS will include information from a recently published paper (Cartwright *et al.* 2019) in the draft 2019 SAR.

Comment 21: CBD-HSUS-WDC note that in the CNP humpback whale report, one humpback injury was observed in the Hawaii shallow-set longline in 2015 that is not recorded in the report's paragraphs on "Fisheries Information" nor recorded in appendices giving fishery-specific information. The appendices to the Alaska stock assessment report do not include interactions of Alaskan stocks with Hawaii fisheries. Also, in 2017, the Pacific stock assessment report included only Appendix 3, a summary of stock information.

Response: Our marine mammal SARs contain information on human-caused mortality and serious injury; thus, the non-serious injury observed in 2015 in the Hawaii shallow-set longline fishery is not included in the Central North Pacific humpback whale SAR. However, publications by the NMFS Pacific Islands Fisheries Science Center (*e.g.*, Bradford 2018, Bradford and Lyman 2018) that are cited in the SAR contain details about the human-caused mortality, serious injury, and non-serious injury of humpback whales observed in Hawaii fisheries and/or reported to the NMFS Pacific Islands Region stranding network. The 2017 U.S. Pacific SARs contain only the reports and appendices that were revised in 2017. An appendix in complete versions of the U.S. Pacific SARs (*e.g.*, Carretta *et al.* 2017) describes fisheries in U.S. west coast and Hawaii waters, while appendices in the NMFS Alaska SARs describe fisheries in Alaska waters.

Comment 22: CBD-HSUS-WDC urge NMFS to include more detail about the impacts of increasing ambient noise on humpback whales in the CNP humpback whale report. For example, a recent study of humpback whales in Glacier Bay National Park found that as ambient sound levels increased, humpback whales responded by increasing the source levels of their calls by 0.81 decibel (dB) for every 1 dB increase in ambient sound. In addition, for every 1 dB increase in ambient sound, the probability of a humpback whale calling in the survey area decreased by 9 percent. They suggest these details are especially important to guide management measures to protect whales from increasing ocean noise pollution.

Response: Given the lack of conclusive data on negative impacts of anthropogenic noise on the humpback whale stock, we believe that the existing text in the ‘Habitat Concerns’ section of the Central North Pacific humpback whale SAR is sufficient.

Bowhead whale

Comment 23: The North Slope Borough comments the bowhead quota from the International Whaling Commission (IWC) was changed in 2018 to take effect in 2019 and includes up to 67 strikes per year plus up to 33 previously unused strikes. They suggest because the new quota was broadly publicized, NMFS include a footnote in the bowhead whale report to reference the new quota that will take effect in 2019.

Response: We have added information about the new block quota for the period 2019 to 2025 to the final 2018 SAR.

Killer whale, AT1 Transient

Comment 24: CBD-HSUS-WDC request that the final stock assessment report for the AT1 Transient killer whale reflect that in 2015 one killer whale, apparently from an Alaska transient stock, was entangled in a California commercial Dungeness crab trap. Given the uncertainty in the stock definitions for Alaska killer whales and the overlap in range of the AT1 Transient stock with the Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock, they urge NMFS to identify all fishery-related serious injury and mortality for Alaska transient killer whales in the stock assessment report for AT1 Transient whales. Further, a second killer whale of unknown stock origin was reported entangled in a California commercial Dungeness crab trap and was able to self-release. CBD-HSUS-WDC stress the importance that the stock assessment reports identify the killer whale stocks that are vulnerable to entanglement in Dungeness crab traps. Neither the death in 2015 nor the interaction in 2016 is reported in the killer whale stock assessment report.

Response: Based on genetic analysis, the killer whale that entangled and died in commercial California Dungeness crab pot gear in 2015 was identified as a transient killer whale with a mitochondrial DNA (mtDNA) haplotype that has been found in transient killer whales in the Pribilof Islands and western Aleutian Islands. However, the whale cannot be assigned to a specific stock because mtDNA haplotypes are unique to ecotypes of killer whales (*e.g.*, resident, transient, offshore) but not to populations. Therefore, we will assign this mortality to both the Gulf of Alaska, Aleutian Islands, and Bering Sea Transient killer whale stock and the West Coast Transient killer whale stock in the next revisions of these SARs and in the NOAA Technical Memorandum that

contains information on human-caused mortality and injury of NMFS-managed Alaska marine mammal stocks in 2013-2017 (Delean *et al.* in press). The mortality will not be assigned to the AT1 Transient killer whale stock, because none of the whales in this population are missing. The killer whale that entangled in and self-released from commercial California Dungeness crab pot gear in 2016 was photographically identified as a member of the West Coast Transient stock of killer whales, and this non-serious injury will also be included in Delean *et al.* (in press). We will add a statement to the draft 2019 AT1 Transient killer whale SAR noting that transient killer whales have entangled in pot gear in other areas and entanglement in this type of gear may be a risk for the AT1 Transient stock of killer whales.

Comments on Atlantic Issues

General large whale UMEs

Comment 25: CBD-HSUS-WDC point out that NMFS presented information at the most recent (2018) meeting of the Atlantic Large Whale TRT regarding three concurrent large whale UMEs that are ongoing. According to this agency presentation, they include one from 2016-2018 affecting humpback whales in the Atlantic (Cause: Undetermined; Contributory Human Interaction); another from 2017-2018 affecting North Atlantic right whales in the Atlantic (Cause: Preliminary Human Interaction); and one from 2017-2018 affecting minke whales in the Atlantic (Cause: Undetermined; Contributory Human Interaction and Infection). Each of these three concurrent large whale UMEs span from approximately 2016 to the present and extend from Atlantic Canada to Florida and involve 155 whales in total. CBD-HSUS-WDC comment that

although NMFS has made public the preliminary or contributory findings of human interaction in all three investigations public, there is little mention made of this in a number of the affected SARs.

Response: The period covered by the 2018 SARs is 2012-2016. The humpback whale UME began in January of 2016 and the 2018 SAR includes language about the UME in the other mortality section. Any 2016 animals included in the humpback whale UME that were determined to be anthropogenic are included in the mortality table. The recent right whale UME was established in June of 2017. Although the time frame of this UME is outside the focus of the 2018 SAR, during its review of the SAR at the Atlantic SRG meeting in February 2018, the SRG suggested it was important to mention the UME in the text of the report. Prior to publishing the draft right whale SAR for public comment, NMFS updated the SAR text, added a link to the UME webpage, and noted that all 2017 events that are determined to be anthropogenic in nature will be included in the 2019 SAR. The minke whale UME started in January of 2017 and also was outside the time frame of the the 2018 minke whale SAR. We have added text to the final 2018 minke whale SAR that references the UME and will include any events that are determined to be anthropogenic in nature in the mortality table and calculations in the 2019 SAR.

North Atlantic right whales

Comment 26: The Center for Biological Diversity, Conservation Law Foundation, Defenders of Wildlife, The Human Society of the United States, Southern Environmental Law Foundation, and Whale and Dolphin Conservation (the Organizations) suggest that

while NMFS has included some updates in the “Stock Definition and Geographic Range” section of the North Atlantic right whale report, this section should be revised to condense the historical distribution information and include the significant changes in right whale distribution that have occurred since 2010.

Response: We agree with the Organizations that the “Stock Definition and Geographic Range” section of this report could use substantial updates and will plan to make these updates in the 2019 SAR.

Comment 27: The Organizations appreciate that NMFS includes a statement in the “Stock Definition and Range” section of the North Atlantic right whale report noting a habitat shift resulting in an increased use by right whales of Cape Cod Bay and decreased use of the Great South Channel. However, they request NMFS also re-evaluate the section which states that “visual and acoustic surveys have demonstrated the existence of seven areas where western North Atlantic right whales aggregate seasonally: the coastal waters of the southeastern United States; the Great South Channel; Jordan Basin; Georges Basin along the northeastern edge of Georges Bank; Cape Cod and Massachusetts Bays; the Bay of Fundy; and the Roseway Basin on the Scotian Shelf (Brown *et al.* 2001; Cole *et al.* 2013).” The Organizations do not dispute the accuracy of the data from the sources cited but note that these sources are between five and 17 years old. The Organizations assert NMFS itself has acknowledged that sightings in the Bay of Fundy have declined over the past 10 years, and the Agency has recently shifted significant resources to Canada, leaving many areas of the Gulf of Maine, including

Georges and Jordan Basins, without meaningful effort to evaluate the current importance of those locations to right whales.

Response: We have added a more recent reference to this section in the 2018 final SAR (Mayo *et al.* 2018). We will re-evaluate and update the section if newer sources are available for the 2019 SAR.

Comment 28: The Organizations disagree with NMFS' conclusion that sightings south of Nantucket and Martha's Vineyard reflect only a "modest late winter use" of this area by the species, suggest that the waters south of Cape Cod are increasingly important, and ask the Agency to review its own use of Dynamic Area Management (DMA) declarations for these waters as additional confirmation of their significance. In light of distributional changes in right whale habitat noted since 2010, the Organizations comment it is important for the stock assessment reports to reflect not only historic, but also recent sightings outside of "traditional" habitat use that may indicate shifting habitat use and broader distribution.

Response: As the period covered by the 2018 SARs is 2012-2016, any sightings made and DMA zones declared in 2018 are outside of the time frame of this report, but we will reflect any updates in the 2019 SAR. We have removed the word "modest" and changed Stone *et al.* to Leiter *et al.*

Comment 29: The Organizations also ask NMFS to consider omitting older information and updating the references used in the "Stock Definition and Range" section of the North Atlantic right whale report. For instance, according to the draft SAR, "(h)igh-resolution (*i.e.*, using 35 microsatellite loci) genetic profiling has been completed

for 66 percent of all North Atlantic right whales identified through 2001,” for which a 2007 publication is cited. However, a 2009 publication by Frasier *et al.* states that high-resolution genetic profiles are available for greater than 75 percent of catalogued right whales.

Response: We agree with the Organizations and have updated the Frasier citation in the final 2018 SAR. As noted above, we will re-evaluate and update this section and include newer sources if available in the 2019 SAR.

Comment 30: The Organizations comment it is unclear why Nmin was removed from the “Population Size” section of the North Atlantic right whale SAR and why the estimates provided here appear to differ from those provided by NMFS in its 2018 Technical Memo. According to the draft SAR, it appears Nmin was negated and changed only to “N” due to uncertainties around a probabilistic model and a median abundance of 451 individuals is provided. However, the NOAA Tech Memo, also citing Pace *et al.* 2017, estimates an “overall species abundance of about 400.” They suggest this lower number—the minimum estimate of animals likely alive—would seem more appropriate to provide as an Nmin.

Response: The “min” was originally removed because the author thought using Nmin would cause confusion with the Minimum Number Alive calculation used in previous SARs. We have corrected this in the final 2018 report and added Nmin back to the text because the sentence refers to the 60 percent lower bound common to most SARs but in this case results from the mark recapture estimation procedure. The Nmin of 445 reported in the 2018 SAR is the lower limit of the 60 percent credible limit on the median

estimate of 451. This is the calculation established by the GAMMS (NMFS 2016). The “overall species abundance of about 400” reported in the Hayes *et al.* 2018 NOAA Tech Memo was calculated by a different method and took into account the 2017 mortalities, which are outside the time frame for the 2018 SAR.

Comment 31: The Organizations suggest the “Current Population Trend” section in the North Atlantic right whale report should be revised and updated to omit aging literature (*e.g.*, from the 1990s) that appears less relevant. They strongly suggest retaining the figures in this section, abbreviating historic information and using language taken from the NOAA Tech Memo which more clearly assesses the current status including the recent population decline.

Response: We discussed this issue with the Atlantic SRG at their 2018 meeting. The consensus was that while this SAR should continue to maintain its temporal integrity for abundance analysis and the case by case reporting of interactions, language would be added to the text referring to the 2017 mortalities. Prior to publishing the draft right whale SAR for public comment, we added the following text to the “Annual Human-Caused Serious Injury and Mortality” section of the report: “*Although PBR analyses in this SAR reflect data collected through 2016, it should be noted that an additional 17 right whale mortalities were observed in 2017 (Daoust et al. 2017). This number exceeds the largest estimated mortality rate during the past 25 years. Further, despite the usual extensive survey effort, only 5 and 0 calves were detected in 2017 and 2018, respectively. Therefore, the decline in the right whale population will continue for at least an*

additional 2 years.” We will report the statistical analysis of population trends that include the 2017 mortalities in the 2019 SAR.

Comment 32: The Organizations comment in the “Current and Maximum Net Productivity Rates” section of the North Atlantic right whale report, it is not clear how NMFS arrived at a total of 443 calves born between 1990 and 2016. According to NOAA’s 5-Year Review: Summary and Evaluation for North Atlantic right whales, “(f)rom 1990-2014, 411 right whale calves were observed born, an average of 16.4 per year (with a standard deviation of 9.2). However, according to the 2017 Right Whale Report Card provided by the New England Aquarium, 17 calves were born in 2015 and 14 in 2016, which would raise the total to 442, not 443.

This section also includes a comparison of North Atlantic right whales to a counterpart species in the Southern Hemisphere. While we do not discount the information provided, it is unclear why NOAA did not rely instead on the more recent information in Corkeron *et al.* 2018. We understand the paper was not yet published when the draft report was made available to the public but note that it is not unprecedented for Stock Assessment Reports to include manuscripts “in review,” as evidenced by “Henry *et al.* in review,” cited in this draft.

Response: We have updated the total number of calves born between 1990 and 2016 to 442 in the final SAR. The Henry *et al.* paper, in review at the time we published the draft SAR, is the Serious Injury and Mortality Report for the same time period as the SAR and is on a parallel review track. The Henry *et al.* paper is currently in press and will be available shortly. In the interim, it will be provided upon request. The Corkeron *et*

al. 2018 paper does cover more recent information but is more applicable to later SAR periods and will be included in the appropriate future SAR.

Comment 33: The Organizations appreciate the inclusion of a statement reflecting the unprecedented mortality of 17 right whales in 2017, the recent poor calving years, and the acknowledgement of a decline in the population but question whether any value of PBR other than zero is appropriate to use for this species when NOAA itself has determined the population is currently declining at 2.33 percent per year as a result of human causes.

Response: As directed in the MMPA, each SAR “shall” estimate the PBR level for the stock. Further, the statute states that PBR is calculated as the product of three elements: the minimum population estimate (N_{min}); half the maximum net productivity rate ($0.5 R_{max}$); and a recovery factor (Fr). In this case, PBR is calculated as 0.9.

Comment 34: The Organizations request NMFS to consider a comprehensive update of language in the “Annual Human-Caused Serious Injury and Mortality – Background” section of the North Atlantic right whale SAR to better reflect a more current view of anthropogenic impacts. For example, citations referencing analyses on entanglements of right whales are from 1999, 2001, and 2009; and, there are more recent information available. Additionally, they note there is no mention of sub-lethal impacts resulting from entanglements, in spite of available publications indicating this poses a significant population-level risk to the species.

Response: We will update the text and citations for this section in the 2019 report. Regarding sub-lethal impacts resulting from entanglements, we note that the van der

Hoop *et al.* (2017) paper is cited in the ‘Productivity Rates’ section of the report: “The available evidence suggests that at least some of the observed variability in the calving rates of North Atlantic right whales is related to variability in nutrition and possibly increased energy expenditures related to non-lethal entanglements (Rolland *et al.* 2016; van der Hoop *et al.* 2017).” We will discuss with the Atlantic SRG how best to incorporate discussion of sub-lethal effects into the “Annual Human-Caused Serious Injury and Mortality” section of the North Atlantic right whale SAR.

Comment 35: The Organizations request NMFS include more recent studies in the “Fishery-Related Mortality and Serious Injury” section of the North Atlantic right whale report which can be used to better assess the impacts of serious injury resulting from fishery interactions. For example, van der Hoop *et al.* 2017 concluded that the duration of an entanglement is critical in determining the survival of the impacted individual and that chronic entanglement is a costly life history stage, not a short-term event. Pettis *et al.* 2017 found that severely entangled whales, along with lactating females, were more likely to exhibit declining body conditions than any other population segment. While they acknowledge that NMFS has set criteria for which serious injury and mortalities are determined, the Organizations stress consideration of these kinds of studies can help inform these criteria and better evaluate the overall impact of fishery interactions on this declining species.

Response: We are working with partners on ways to quantify chronic entanglement so it can be incorporated into the serious injury determination process. A challenge that we are trying to address is that the status of individual whales might

change between resights. We are undertaking a review of the policy distinguishing serious from non-serious injury and will consider this type of information throughout that process.

Comment 36: The Organizations ask NMFS to update the ID # for two North Atlantic right whales (#3996, #3610) and review its assessment of a number of individual North Atlantic right whales (including #3692, #2810, #1142, #1306, [#unidentified], and #4140) to determine whether they should be added to the list of M/SI cases in Table 1.

Response: The Northeast Fisheries Science Center staff reviewed all these cases and their determinations regarding serious injury were later reviewed by experienced staff at another Fisheries Science Center, the Greater Atlantic and Southeast Regional Offices, and the Atlantic SRG, per NMFS Policy and Procedure for Distinguishing Serious from Non-Serious Injury of Marine Mammals. NMFS staff looks for evidence of significant health decline post event.

Regarding whale #3996 and #3610, we have updated Table 1 in the final report to include the ID numbers. Three of the cases (#3692, #2810, and #1306) are “inconclusive,” or have evidence of health decline on par with rest of population. Regarding the unidentified whale located on Roseway Basin on September 13, 2015, while NMFS agrees that it is a serious injury, our experts cannot determine the source of the injury; because there is no agreement on vessel strike or entanglement, it cannot be tallied with other human interaction events. There are other instances where whales have serious injuries, but we do not know the source. For whale #1142 and #4140, we will include the updated information on the additional sightings in the 2019 report.

Comment 37: The Organizations agree with NMFS' conclusion that the species should remain listed as endangered and is in decline. However, according to the 5-Year Review: Summary and Evaluation of the North Atlantic Right Whale (*Eubalaena glacialis*), the species has been in decline since 2010, not 2011, as amended in the draft SAR.

Response: The 2010 abundance estimate was higher than the 2009 estimate. The 2011 estimate was lower than 2010, so we are considering 2011 as the first year with evidence of decline.

Humpback Whales- Gulf of Maine Stock

Comment 38: CBD-HSUS-WDC suggest that the "Stock Definition and Geographic Range" section of the Gulf of Maine humpback whale report should be revised to condense the outdated information and include a more thorough examination of recent changes in distribution and habitat use.

Response: We agree that the "Stock Definition and Geographic Range" section of this report could use substantial updates and will plan to make these updates in the 2019 SAR.

Comment 39: CBD-HSUS-WDC comment they understand that NMFS cannot rely on an estimate based on data more than eight years old and appreciate NMFS' development of a minimum number alive for the Gulf of Maine stock of humpback whales based on the Center for Coastal Studies (CCS) humpback whale catalog. They note that these data are collected by CCS for dedicated research purposes and include opportunistic sightings contributed to CCS by others. These data represent the most

comprehensive catalog of this management stock and are provided to NMFS as a courtesy. CBD-HSUS-WDC urge NMFS to consider providing dedicated support for the long-term sustainability of this catalog, since NMFS relies on it for management of this stock.

Response: We agree with the commenter on the importance of the CCS' humpback whale catalog and acknowledge your comment.

Comment 40: CBD-HSUS-WDC do not disagree with NMFS's assessment that the lack of carcass recovery and post-mortem examination confound conclusions regarding whether ship strikes or entanglements are more prevalent and note that NMFS does not provide in the Gulf of Maine humpback whale SAR any data on the analysis of carcasses recovered in the ongoing UME. They suggest it would be useful to include a more updated review for a UME stock to assess the number of cases in which necropsies have been conducted and what, if any, causes of death were determined. For example, NMFS has indicated elsewhere that at least 23 out of 60 examined carcasses were confirmed or suspected vessel strikes and at least four were confirmed or suspected entanglement cases. Since more recent data are available, they should be used (*e.g.*, data from 2017 are used in the North Atlantic right whale SAR). In addition, CBD-HSUS-WDC request that NMFS consider providing more detail in the "Other Mortality" section beyond "causes of these UME events have not been determined."

Response: While we included data from 2017 in the body of the right whale SAR as recommended by the Atlantic SRG, we did not yet include those data in the tables or in calculations. Any cases from the humpback whale UME that occurred in 2016 and were

determined to be anthropogenic are included in Table 1 of the 2018 SAR. (See response to Comment 25.) For the 2019 SARs, we will review the UME language used in all reports and strive for more consistency. We will also provide some information on the number of cases necropsied, etc.

Comment 41: CBD-HSUS-WDC request NMFS clarify its conclusion in the “Fishery-Related Serious Injuries and Mortalities” section of the Gulf of Maine humpback whale report that 29 serious injuries were prevented by disentanglement between 2012 and 2016. For example, Spinnaker, an adult female humpback whale, was known to be entangled on at least four separate occasions and disentangled three times but ultimately died as a result of what appears to be her second gear interaction. CBD-HSUS-WDC is unclear as to how NMFS’ evaluation of disentanglement success would have been applied in such a case.

Response: As noted above in our response to Comments 34 and 35, we do not currently have a method to address sublethal effects or more subtle/slow health decline for the assessment of long-term success. Under NMFS’ Policy and Process for Distinguishing Serious from Non-Serious Injury of Marine Mammals (NMFS 2012), we consider disentanglement to be successful unless there is additional information available on the condition of the animal such as a significant health decline. This was the case with Spinnaker. Her mortality was attributed to her 2014 entanglement event, based on evidence from her 2015 necropsy.

Comment 42: CBD-HSUS-WDC comment they understand the factors that dictate how NMFS evaluates a stock as strategic and greatly appreciate NMFS’ clarification of

the uncertainties in the case of Gulf of Maine humpback whales, including that entanglements are surely biased low and that the uncertainties associated with their assessment may lead to an incorrect determination of the stock's status.

Response: We acknowledge this comment.

Fin whale

Comment 43: CBD-HSUS-WDC note that abundance estimates and range definition in the fin whale report are based on survey data no more recent than 2011, at least 7 years ago. According to NMFS' own guidelines, abundance data should be more recent than eight years with a "worst case" scenario of a decline presumed thereafter. At the 2018 meeting of the Atlantic SRG, NMFS informed the group that though Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys have been funded by multiple agencies, no surveys were planned for 2018. In light of well-known perturbations in ocean temperatures and prey resources, CBD-HSUS-WDC recommends NMFS make every effort to assure that depictions of the species' range and survey-derived abundance estimates do not become outdated since there may be shifts in the ranges of large cetaceans who are dependent on distribution of key forage fish, which can result in exposure to different sources of risk (e.g., encountering fisheries in new areas).

Response: We acknowledge this comment and note that we will provide a new abundance estimate for this stock in the 2019 SAR. The new estimate will be based on 2016 surveys, and the sighting locations will be added to the sighting distribution map in that SAR. As a point of clarification, the GAMMS (NMFS 2016) state that "unless compelling evidence indicates that a stock has not declined since the last census, the

Nmin estimate of the stock should be considered unknown if 8 years have transpired since the last abundance survey.” This is different from presuming a “worst case scenario of a decline” as stated in the comment.

Minke whale

Comment 44: CBD-HSUS-WDC reiterate their comments on prior SARs, that where current information is readily available NMFS should incorporate that information into the most recent SAR to assure adequate depiction of the stock status. In the case of minke whales, the draft SAR makes no mention of a UME declared for this species in early 2017. In its public information page, NMFS states that “[p]reliminary findings in several of the whales have shown evidence of human interactions or infectious disease,” though a single definitive cause is not identified for all stranded animals. The declaration of an on-going UME should be added to the SAR either in the section on “Annual Human-Caused Mortality and Serious Injury” or in the section on “Other” mortality.

Response: See response to Comment 25.

Risso’s Dolphins

Comment 45: CBD-HSUS-WDC point out that the abundance estimate for Risso’s dolphins dates to 2011; and, as noted in a previous comment, according to NMFS’ own guidelines, information on stock abundance should be more recent than 8 years. They recommend that NMFS update an abundance estimate as soon as possible so that it does not age out under GAMMS guidelines.

Response: We will provide a new abundance estimate for this stock in the 2019 SAR.

Long-finned pilot whales

Comment 46: CBD-HSUS-WDC are concerned that the current mortality estimate for long-finned pilot whales is perilously close to the PBR. While they agree that the stock is considered “non-strategic” based on the most recent estimate of bycatch being below PBR, they recommend this may be temporary and bears watching. Because bycatch is so close to PBR and has fluctuated annually (often exceeding PBR), CBD-HSUS-WDC recommend that NMFS undertake an annual review of this stock’s SAR rather than every 3 years as indicated under GAMMS for non-strategic stocks.

Response: We recognize CBD-HSUS-WDC’s concern about long-finned pilot whales and are aware of the fluctuations of bycatch around PBR for this stock. Because of this situation, we have updated the WNA long-finned pilot whale report in 18 of the 20 existing SARs and will continue to closely monitor the bycatch of pilot whales.

Short-finned pilot whales

Comment 47: CBD-HSUS-WDC stress the need to re-assess structure for short-finned pilot whales in both the Atlantic and in the Gulf of Mexico. They note at the Atlantic SRG’s meeting in 2018, the SRG recommended that NMFS “...consider new data, including satellite-linked telemetry and photo identification, together with molecular evidence of stock structure, in a new analysis. In addition, the SRG recommends that both Centers prioritize the collection of new information that could contribute to the question of stock structure of this species, by deploying satellite linked transmitters, and collecting photo-identification images and biopsy samples for genetic analyses during upcoming Gulf of Mexico Marine Assessment Program for Protected

Species (GoMMAPPS) and AMAPPS III cruises.” CBD-HSUS-WDC understand that limits on resources result in limits on updating stock information but assert up-to-date information is key to the proper management of fishery interactions with short-finned pilot whales to assure that fishery-related bycatch is not exceeding the PBR of a properly-defined stock. They recommend NMFS prioritize collection of information to assure the stock is properly defined and assessed.

Response: In planning discussions with BOEM and the U.S. Navy regarding GoMMAPPS and AMAPPS, we raised the need for additional data collection to evaluate short-finned and long-finned pilot whale stock structure and movement patterns. However, this was not identified as a priority for these programs. The GoMMAPPS project field work is complete as of the Fall of 2018, and the potential for AMAPPS III is currently under discussion. We will continue to identify pilot whale stock structure as an important information need in these discussions. In addition, the Southeast Fisheries Science Center is currently working to revisit short-finned pilot whale stock structure using previously collected samples and next generation genetic sequencing techniques.

Comment 48: CBD-HSUS-WDC note with concern that NMFS states in the short-finned pilot whale SAR that “The total annual human-caused mortality and serious injury for this stock during 2012–2016 is unknown” although it also states that there were 168 takes attributed to the longline fishery. They strongly encourage NMFS to improve its ability to “predict the species of origin (long-finned or short-finned pilot whale) for each bycaught whale” which it indicates in the SAR is hampering its ability to determine total anthropogenic mortality for both species.

Response: The total annual human-caused mortality and serious injury for this stock is unknown primarily because there was a self-reported take in the unobserved hook and line fishery in 2013, rendering the estimate of fishery-caused mortality an underestimate. While there remains some uncertainty in the assignment of some bycatch interactions to species, this is not a factor in describing total human-caused mortality and serious injury as “unknown.”

White Sided Dolphin

Comment 49: CBD-HSUS-WDC comment that given the similarities of fisheries in Canada to those in the northeast United States, it is troubling each year to read that there are no recent data regarding Canadian bycatch of white sided dolphin in its fisheries, though stranded animals are reported to evidence entanglements. They suggest it is important to work with the Canadian government to encourage better tracking of lethal bycatch.

Response: We agree with CBD-HSUS-WDC’s concern and continue to engage with the Canadian government to receive data on the bycatch of white sided dolphin in Canadian fisheries.

Short Beaked Common Dolphin

Comment 50: CBD-HSUS-WDC point out the short beaked common dolphin abundance estimate is aging and needs to be updated, particularly as NMFS has used only the U.S. portion of this stock’s range, “and a small portion in Canadian waters.” Given the range of this species well into Canada, and a key uncertainty in population estimates is the number of animals in Canadian waters, they suggest the United States should be

working more closely with the Canadian government to facilitate cross-border collaboration in understanding trans-boundary movements and both abundance and risks on both sides of the border for this stock. They note during the 2018 meeting of the Atlantic SRG, there was discussion of notable bycatch of this species in the monkfish fishery in Canada and that does not appear to have been captured in the SAR which only provides a “pers. comm” reporting a Canadian take in 2012.

Response: We will include a new abundance estimate for this stock in the 2019 SAR, which will include any available Canadian data. Unfortunately, the Canadian fishery bycatch data are currently not available to us, and we are only receiving unpublished reports.

Rough-Toothed Dolphin

Comment 51: CBD-HSUS-WDC appreciate the substantial updates to the rough-toothed dolphin SAR. They note that the minimum population estimate of 67 (and a PBR of less than 1) was statistically derived from a single sighting during a survey that NMFS indicates covered only a portion of the stock’s range, making this estimate highly uncertain. Though fishery-related mortality of rough-toothed dolphins during the time period of this SAR was said to be zero, NMFS acknowledges that longline fisheries that are similar to west coast fisheries (*e.g.*, in Hawaii) are known to interact with the species, as have various purse seine fisheries. CBD-HSUS-WDC are concerned that observer coverage on some of these similar east coast fisheries may be insufficient to capture mortality of animals of this species whose abundance remains poorly understood.

Response: Rough-toothed dolphins are very rarely seen during NMFS surveys in the Atlantic, creating a challenge for estimating abundance with confidence. The SAR is transparent about the estimate being highly uncertain. We acknowledge that observer coverage in the longline fishery is likely insufficient to reliably quantify interactions with rarely encountered species.

Harbor Porpoise

Comment 52: CBD-HSUS-WDC note the most recent estimate of abundance for harbor porpoise was derived from a 2011 partial range survey. NMFS acknowledges that not all the range was covered at the appropriate time of year nor did the extant estimate account for availability bias as animals along the trackline may be submerged. Though this results in a negative bias and bycatch is well below PBR, they urge NMFS to update abundance range-wide since the low bycatch rate appears to be a result of depressed gillnet effort due to quota restriction on groundfish and could rise if catch quotas are raised.

Response: We will include a new abundance estimate for this stock in the 2019 SAR. The new estimates will be based on both U.S. and Canadian surveys and will constitute a more complete coverage of harbor porpoise range in the Western North Atlantic. The new abundance estimates will account for availability bias for all species, including harbor porpoises.

Gray and harbor seals

Comment 53: The Commission comments that the 2018 draft SARs continue to lack reliable, up-to-date information on abundance, distribution, and movements between

Canadian and U.S. waters for the western North Atlantic stocks of gray and harbor seals. They stress the need for such information is becoming more pressing, especially for gray seals as their numbers and reports of conflicts with fisheries increase. The Commission remains concerned that the outdated or incomplete abundance and bycatch estimates currently available hamper NMFS' ability to competently manage those stocks. Therefore, they recommend NMFS secure the necessary resources and strengthen existing collaborations to (1) plan and execute comprehensive aerial surveys, including collecting data necessary to estimate appropriate haul-out correction factors for both stocks, and (2) increase efforts to understand and reduce bycatch for gray seals in particular. Studies on seal diet, movement patterns and fisheries interactions will contribute additional information vital to successful management of these stocks.

Response: We agree with the Commission and note that we have been attempting to fill the information gaps as best as possible with the resources we have available. The 2018 SARs report a minimum estimate of gray seal abundance during the breeding season in U.S. waters, based on an extrapolation from pup counts obtained from aerial surveys. The multiplier used to extrapolate pup counts to total population size (4.3) is based on age-structured population models developed with known life history information from the same stock in Canadian waters. While use of the multiplier assumes these same life history parameters pertain to the U.S. portion of the stock, the 4.3 value does fall within the range of other adult to pup ratios suggested for pinniped populations, and uncertainties are noted in the SAR chapter.

We recognize that this approach does not take into account changes in abundance throughout the year as animals move between the United States and Canada. We have submitted several proposals to partners to tag gray seals but to date none have been accepted. Given limited resources and competing priorities, it has been difficult to secure these kinds of resources internally. Due to the high cost of studying seal movements via satellite tags, we have also explored studying movements via acoustic tags. We began a pilot study in 2017 under our previous research permit, but then were denied use of continuing the research when our permit was renewed, due to MMC concern about the impact of acoustic tags on the animals.

Despite the difficulty we are having in securing the necessary resources to fully investigate the abundance, distribution, and movements between Canadian and U.S. waters for the western North Atlantic stocks of gray and harbor seals, we are making some progress. In May 2018, we conducted an aerial survey of harbor seals which will be used to update the previous estimate reported in the SARs. We also conducted aerial surveys after the 2018 UME. We collaborated with a non-profit organization to study the movements of gray seal pups and successfully deployed 11 satellite tags in 2019. We also surveyed the gray seal pupping colonies in 2019. The results from this and other recent seal research will be incorporated into the SAR once the data have been reviewed and published.

With respect to bycatch reduction, we collaborated with our research partners to study pinniped depredation in the gillnet fishery in 2018 and have recently begun communications with another group to develop a proposal to study the effectiveness of

pingers in reducing bycatch. We are investigating diet via hard parts in the stomachs of bycaught animals, and via fatty acids in blubber.

In summary, we believe the Commission's comment encapsulates the goals of our seal ecology and assessment group. We continue to try and secure resources to achieve these goals but get pushback in the face of competing conservation needs. Despite this, we continue to make small headway in studying the abundance, distribution, movements, diet, and bycatch of gray and harbor seals.

Harbor Seals

Comment 54: CBD-HSUS-WDC strongly urge NMFS to update pinniped SARs to better reflect current knowledge of the range of the species. In the harbor seal SAR, the section on Stock Definition and Range They recommend the "historic" data (often 20 or more years old) should be abbreviated and replaced with more recent information on regular habitat use well outside of the area outlined in the section on distribution, and the legend that explains the map shading, that the areas from New Jersey south represent only "stranding records" is outdated and incorrect. CBD-HSUS-WDC also note that internet posts by NOAA show the agency is tracking harbor seals regularly ranging well into the mid-Atlantic. The New Jersey Wildlife Foundation documents a major haul out in Great Bay, NJ, with over 120 harbor seals typically hauled out in the winter. The Virginian-Pilot reports dozens hauled out at the mouth of the Chesapeake Bay each winter. Seals, including harbor seals, regularly strand in New Jersey and other parts of the mid-Atlantic, often as very small pups, indicating the possibility of pupping well south of

New England. Thus, this SAR should be revised to more accurately reflect current distribution.

Response: We have updated the range map in the final 2018 harbor seal SAR to change the “stranding records only” portion to indicate “seasonal designation.” The period covered by the 2018 SARs is 2012-2016 so we will include the tagging work performed in 2018 in the appropriate future reports. We will update the text and references in the next SAR to reflect the seasonal presence of harbor seals in the mid-Atlantic.

Comment 55: CBD-HSUS-WDC recommend both the harbor seal and gray seal SARs be updated to include information about a long-closed UME for these stocks that ended in 2013, and an ongoing UME affecting these stocks which began prior to July 2018. This current UME has cost the lives of over 1,300 harbor and gray seals in the northeastern United States.

Response: We believe this comment pertains to the 2011 UME (see <https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events>), and we have referenced this UME in the harbor seal and gray seal chapters. The period covered by the 2018 SARs is 2012-2016 so we will include the 2018 UME in the appropriate future reports.

Gray Seal

Comment 56: CBD-HSUS-WDC recommend NMFS update the text and range map for gray seals and point out the map shows movement south of New Jersey as “stranding records only,” but there are popular press reports and photographs of animals

hauled out near Chesapeake Bay during the winter. They also note that, though cited in the harbor seal SAR, the gray seal SAR lacks a citation to published work by Johnston *et al.*, 2015, which contains useful information regarding strandings and bycatch of this species.

Response: We acknowledge this comment and have reviewed the gray seal range map. At this time we have not made any changes, as we do not have new peer-reviewed literature to include in the text which would support the extension of the range map. However, we will be discussing improvements to the SAR range maps in general at the SRG meetings and will revisit this issue at the time. As to Johnston *et al.* 2015, we do not feel that the paper adds new information that is not already stated or reported in the SARs; and, while much of the discussion points in that paper are interesting, they are speculations to explain patterns in the data.

Hooded Seal

Comment 57: CBD-HSUS-WDC point out that the hooded seal SAR lacks a range map. While they acknowledge that much of the distribution and greatest habitat use is outside of the United States, they suggest there is increasing documentation of hooded seals' perhaps extra-limital use of U.S. waters in the winter that may be helpful to include in a range map.

Response: A range map has not been included in this chapter due to the extra-limital presence of hooded seals in U.S. waters. However, we can revisit the possibility of adding in reported bycatch or sightings information when we discuss general improvements to the range maps at the upcoming SRG meetings.

Common Bottlenose Dolphin

Comment 58: The Commission comments the 2018 draft SARs for Bay, Sound, and Estuary bottlenose dolphin stocks include two new reports for the Terrebonne-Timbalier and West Bay stocks. Although the Commission is encouraged to see NMFS incorporating new data, it also is concerned about the references made to publications “in prep.” or “in review” to support some of the key information in the new SARs. The Commission supports the use of the best available science and does not wish to delay publication of new or updated SARs unnecessarily, but the information on which a draft SAR is based needs to be available to the public to enable informed review. Labelling a report as “in review” suggests that the underlying analysis has been completed and submitted for publication, while “in prep.” suggests that the analyses are still ongoing and could be changed prior to publication. As such, reliance on such information might be premature and generally should not be considered the best available science. Therefore, the Commission recommends that, unless exceptional circumstances warrant otherwise, NMFS refrain from publishing draft SARs for public comment that rely on reports or analyses that are still “in prep.” The Commission further recommends that NMFS carefully consider whether it should base draft revisions to the SARs being considered for public comment on analyses that are still “in review.” At a minimum, NMFS should make every attempt to make the underlying reports/publications available to the public during the comment period.

Response: We agree with the Commission that further standardization is needed with respect to finding a balance between providing new information for SARs and

publication requirements. We strive to cite only peer reviewed literature in SARs, to the extent possible; occasionally we will include papers that are “in review” or “in press” in draft SARs with the expectation that the manuscripts will be published by the time the SAR is final. To that point, we have updated the Terrebonne-Timbalier Bay Estuarine System SAR with the final citation, and we have retracted the West Bay SAR in its entirety because one key document remains in peer-review and is not yet published.

Comment 59: CBD-HSUS-WDC note that NMFS provided redlining to illustrate changes made to most of the revised SARs, but the three stocks of bottlenose dolphins (*Tursiops truncatus*) in the Gulf of Mexico (*i.e.*, Terrebonne-Timbalier Bay Estuarine System stock, the West Bay stock and the Northern Gulf of Mexico Bay, Sound and Estuary stocks) lacked redlining to note changes from prior versions. They request for future iterations of all stocks, NMFS use redlining for all draft revised SARs as a courtesy for reviewers.

Response: We provide track changes for all revised draft SARs to make it easier for reviewers. The Terrebonne-Timbalier Bay Estuarine System SAR and the West Bay SAR were newly drafted with no prior versions. For the Northern Gulf of Mexico Bay, Sound and Estuary Stocks SAR, we did submit the revised SAR with changes tracked (*i.e.*, red-line version), and the version appears with changes tracked within the pdf draft that was posted online (U.S. Atlantic and Gulf of Mexico Draft Marine Mammal Stock Assessment (PDF, 257 pages)) at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports>.

Comment 60: CBD-HSUS-WDC express disappointment that NMFS did not include any text in the bottlenose dolphin stock assessments for a number of stocks currently affected by the ongoing UME declared by the agency. The elevated death toll, which began in 2017, has resulted in the mortality of over 100 dolphins in southwest Florida as a result of a red tide bloom (brevetoxin). Several resident stocks could have been affected, given the size of the area involved in the event since documented mortalities began and the affected has changed and/or grown. Since the information was public during the period of time in which SARs were being revised, the SARs for these stocks should have been revised on the basis of the availability of new information documenting adverse impacts on the stocks. CBD-HSUS-WDC also recommend the report be revised to include that the origins of the red tide are primarily human-related.

Response: Elevated dolphin mortalities did not begin until July 2018, which is outside the scope of the 2018 reports. We will include future updates on the UME event in the appropriate bottlenose dolphin SARs.

Common Bottlenose Dolphin: Terrebonne-Timbalier Bay Estuarine System Stock

Comment 61: CBD-HSUS-WDC note in the common bottlenose dolphin Terrebonne-Timbalier Bay Estuarine System stock SAR that a cited reference “capture-recapture photo-ID surveys conducted during June 2016 (Litz and Garrison in prep)” is still not available and listed as “in prep” over two years later. They stress these data should have been analyzed with at least a NOAA Tech Memo, since this stock is one of those affected by the Deepwater Horizon oil spill, and tracking its abundance and vital rates should be a priority, as would providing the public with that information.

Response: The Terrebonne-Timbalier Bay Estuarine System Stock SAR was drafted specifically because this stock is a priority, and NMFS does not want to delay making the most up-to-date information available to the public. The publication describing the survey and abundance estimate is now published, and we have updated the final 2018 SAR with the citation.

Comment 62: CBD-HSUS-WDC are concerned that the common bottlenose dolphin Terrebonne-Timbalier Bay Estuarine System Stock stock may be interacting with the shrimp fishery at notable levels and recommends NMFS treat this stock as a “strategic stock” due to the high likelihood that their PBR is being exceeded. They further stress that NMFS must work expeditiously to stratify data in a way that allows for an understanding of the magnitude of impact to this stock, and should be updating the SAR annually until data can clearly show that it is not strategic.

Response: We acknowledge CBD-HSUS-WDC’s concern and note this topic was discussed at length at the 2018 Atlantic SRG meeting. We requested the Atlantic SRG’s advice on how to handle possible mortality from the shrimp trawl fishery given the limitations of available observer program data and the resulting text follows from the recommendation of the Atlantic SRG. Therefore, we revised the SAR based on the Atlantic SRG’s recommendation. We believe it is unlikely all of the extrapolated bycatch from the state of Louisiana would occur within the boundaries of Terrebonne-Timbalier Bay. We are working to improve the analyses so that an extrapolated estimate specific to each bay/sound/estuary will be available in the future.

Regarding stock status, this stock does not meet the statutory definition of strategic (*i.e.*, ESA-listed, declining and likely to be listed as threatened in the foreseeable future, or serious injury/mortality exceeds PBR). Thus, the stock is determined to be “not strategic.” However, we have indicated concern for the stock in the SAR.

Common Bottlenose Dolphin: West Bay Stock

Comment 63: CBD-HSUS-WDC comment the common bottlenose dolphin West Bay stock is another small stock (less than 50 members) in the Gulf of Mexico, occupying a small defined area within the Galveston Bay estuary and with a PBR of less than 1.0. Fishery-related mortality is stated to average 0.2 per year, or 20 percent of the PBR. However, NMFS acknowledges that all potentially interacting net and trawl fisheries are not observed by the federal observer program and stranding data indicating fishery-related interactions were not considered since, among other reasons, they cannot be attributed to a specific fishery. This stock is also within the operating range of the shrimp trawl fishery. Because the observer program does not extend into the Bay, Sound and Estuarine waters, and the inappropriate spatial resolution of data relative to this stock’s distribution, NMFS could not provide an estimate of interactions and therefore legitimately provide a “zero” estimate. They believe that this small stock, with risk-prone fisheries operating in its range, should be considered strategic—with annual updates of its stock assessment—until such time as data show that it is not in fact sustaining mortality in excess of its PBR.

Response: The West Bay SAR has been retracted from the 2018 SARs because one document remains in peer-review (see response to Comment 58). We agree the West

Bay Stock is a small stock, and this issue was discussed at the 2018 Atlantic SRG meeting. We must follow the statutory criteria for determining strategic status, and this stock does not meet the criteria to be designated as strategic. A lack of information on human-caused mortality is an insufficient basis for designation as strategic.

Common Bottlenose Dolphin: Northern Gulf of Mexico Bay, Sound and Estuary Stocks

Comment 64: CBD-HSUS-WDC reiterate their comment from previous years that NMFS must make a better effort to provide individual SARs for the common bottlenose dolphin Northern Gulf of Mexico Bay, Sound and Estuary individual stocks. While they applaud progress made over the past few years, they stress more needs to be done to provide updated population and mortality estimates as well as assuring that the range of each stock is properly defined.

CBD-HSUS-WDC note that the St. Joseph Bay stock remains lumped with others in this region (identified as stock B-11). Moreover, there is a confusing/cryptic footnote for this stock in Table 1 in the SAR to “[p]lease see the individual stock assessment report for this stock.” Yet we see none for this stock on the NMFS site listing all marine mammal SARs that were not necessarily updated. They comment the reference should be corrected; or, if there is an individual SAR for this stock, it should be listed on the NMFS website at which the final SARs can be accessed.

Response: There is an independent SAR for the St. Joseph Bay Stock, which was first included in the 2011 SARs. The report is available on our website at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock>.

Comment 65: CBD-HSUS-WDC comments that the overarching common bottlenose dolphin SAR for Bay, Sound and Estuarine stock was updated to provide estimates of “years to recover” (absent additional non-natural mortality) from the Deepwater Horizon event. For the Mississippi River Delta stock it was listed as 52 years and for the Mobile Bay/Bonsecour Bay stock as 31 years. However, according to Dr. Randy Wells (pers. comm.), there may also be additional estimates of “years to recovery” estimates for other stocks affected by the Deepwater Horizon spill, including the hard-hit Barataria Bay stock. If so, CBD-HSUS-WDC recommend these estimates for all stocks should be provided in the SAR.

Response: The information on the “years to recover” from the Deepwater Horizon event was included in the overarching Bay, Sound, and Estuary SAR for the Mississippi River Delta and Mobile Bay/Bonsecour Bay stocks because they currently do not have their own independent SARs. However, the Barataria Bay Estuarine System Stock has its own independent SAR, and extensive information regarding impacts of the DWH spill are included therein.

Comments on Pacific Issues

Large whales

Comment 66: The Commission recognizes NMFS’ responsiveness in addressing the recommendations it made on the 2017 draft SARs. In particular the Commission acknowledges the inclusion of 2018 draft SARs for blue and humpback whales, including up-to-date estimates of M/SI and commends the SAR author(s) for making those revisions in such a timely manner.

Response: We appreciate the Commission's comment. The revision schedule for SARs is sometimes delayed by unforeseen circumstances, and we strive to keep the SARs up-to-date with the most relevant information.

Comment 67: The Makah Tribe comments the draft 2018 SARs for large whales introduce a concept to NMFS' stock assessment process in which entanglements of unidentified large whales are assigned to a specific species utilizing a modeling exercise. As the SARs note, each year approximately 15 percent of large whale entanglement reports cannot be assigned to a species due to limitations such as the observer's knowledge of whale identification, sighting distance, weather conditions, and other factors. Carretta (2018) describes a machine learning approach that assigns entangled whales of unknown species to a species based on the location, timing, and other factors. However, NMFS appears to be taking the information from the entanglement reports at face value, without verifying that an entanglement was actually observed or that there are not multiple reports for the same entangled whale.

While NMFS should be applauded for developing a technique for classifying unknown species of entangled whales that assists in quantifying serious injuries and mortalities, the Makah Tribe is concerned that accepting every entanglement report of an unknown whale without scrutiny risks introducing bias into the use of this new tool. They recommend that NMFS be careful in deciding when to include reports of unknown whales in the injury and mortality report and when to apply the model. Specifically, NMFS should apply a stricter quality control methodology for reports where the species

is unknown to ensure that they represent unique events and are not duplicative of other documented cases of serious injury and mortality.

Response: We review all entanglement records for reliability, taking into consideration factors as observers' distance from the whale, the experience of the reporting party, and the narrative associated with the entanglement report. Some entanglement reports are not necessarily verified if the evidence is equivocal. For example, there have been reports of whales described as possibly entangled or playing in nearshore kelp. Gray whales in particular will occur nearshore in kelp beds and a record involving that species with such an equivocal narrative may not be counted as an entanglement. We note that the species proration as applied to unidentified whale entanglements is conservative. This is because unidentified whale entanglement reports are opportunistic in nature and there is a large degree of negative-bias (underreporting) in accounting for all entanglement cases. Additionally, there are many cases of multiple documented whales being entangled in fairly close proximity, so the fact that an unidentified entanglement and known-species entanglement co-occur in the same time period and region does not alone support the notion that they are probably the same animal. Further, we evaluate available information including descriptions and photographs (if available) in an effort to identify re-sighted animals. While it is true that an occasional unidentified whale entanglement may match an identified entanglement case, this is likely only a small minority of cases. Many entanglement cases are followed up with vessels actively searching on the water to relocate whales to attempt gear

removal operations. Many of these whales are never relocated, which highlights the low probability of observing an entangled whale in the first place.

Humpback, blue and fin whales

Comment 68: Point Blue Conservation Science (PBCS) appreciates the inclusion and discussion of the humpback, blue, and fin whale ship strike results from their 2017 paper. They note this is an important step towards realistic treatment of ship strikes and their potential impact on west coast whale populations as compared to relying solely on confirmed strandings. PBCS also applauds the inclusion of methods and results that estimate the proportions of unidentified whale entanglements that likely belong to the various whale species. While both of these sources of information involve modeling with inherent uncertainties, the resulting mortality estimates are certainly more accurate than minimums derived from confirmed strike and entanglement events. Clearly, these better estimates will result in more appropriate management decisions for these species.

Response: We acknowledge the comment and are working to make the data in the SARs more representative of the anthropogenic risks to populations.

Comment 69: PBCS notes in all three SARs (humpback, blue and fin whale), the text states that “strike mortality was recently estimated...in the California Current,” and clarify their models covered the west coast’s U.S. EEZ. This is an important distinction because all three species spend significant time outside this region, meaning that any strike deaths that occur outside the EEZ are not included in our estimates. PBCS points out this is particularly important when considering the implications for blue whales in the context of the Monnahan *et al.* 2015 conclusion that the Eastern North Pacific blue whale

population is near carrying capacity and likely experiences little population-level effects from ship strikes.

Response: We appreciate this clarification and inadvertently equated the California Current with the U.S. EEZ in the humpback, blue, and fin whale SAR text. We have updated the text in the relevant SARs that the estimated vessel strikes do not include undetected events outside of the U.S. EEZ, where these stocks spend a considerable portion of the year.

Comment 70: PBCS notes Monnahan *et al.* 2015 is important research in which the authors conclude that Eastern North Pacific blue whales are nearing carrying capacity. In the blue whale SAR, Monnahan *et al.* 2015 plays a key role in explaining the observed population trend of blue whales. However, PBCS notes the analysis was based on: 1) a lower number of strikes than likely occurs, and 2) a faulty historical distribution of strike mortality. First, since the authors are modeling the entire population, it is important that their ship strike estimates represent total strike numbers, not just those that occur in U.S. waters. PBCS' estimates for July-November in U.S. waters only were 18-40 deaths. To approximate total population mortality, these would need to be extrapolated to include mortality in December-June *and* in areas outside the EEZ. The SAR states that Eastern North Pacific blue whales spend "approximately three quarters of their time outside the U.S. EEZ," suggesting population-level ship strikes could be much higher than our EEZ estimates.

Response: We appreciate the attention to this point (see response to Comment 69) and have included text in the final SAR that better considers the risk, given the available data and estimates.

Comment 71: PBCS notes that Monnahan *et al.* 2015 assume that blue whale ship strike deaths are directly proportional to historical global vessel counts. However, they point out that: 1) U.S. west coast vessel numbers were not linearly related to the global fleet size through time, 2) vessel numbers are not directly proportional to distances traveled, 3) vessel sizes have changed significantly over their analysis period, and 4) vessel speeds, increased through time. These factors mean that strike mortality was likely distributed more recently in time than predicted by the Monnahan *et al.* 2015 ship model. Population-level mortality significantly higher than 35 deaths/yr (used as a high limit by Monnahan *et al.* 2015) and distributed differently in time may or may not change the results of their population model. PBCS suggests that given the significance of the analysis to Eastern North Pacific blue whale management, an improved and updated assessment would be very valuable.

Response: In response to this comment we have included text in the final SAR that better considers the risk, given the available data and estimates.

Comment 72: PBCS suggests that in the blue whale report, there should be clearer distinction between where discussion of EEZ mortality is relevant versus population mortality. They think that the comparison made between their higher 40 deaths/6-month estimate and the Monnahan *et al.* 2015 use of 35 deaths/year suggests a false equivalency and should either be clarified or removed. In addition, they note there is some evidence

that blue whales may actually have behavioral responses to ships that *elevate* their collision risk (*i.e.*, the equivalent to negative avoidance). PBCS thinks the description of our 40 death/6-month estimate as a “worst-case estimate” is inaccurate.

Response: We acknowledge the comment and have revised the text in the final SAR as suggested.

Humpback whale - California/Oregon/Washington (CA/OR/WA)

Comment 73: CBD-HSUS-WDC comment that the increase in PBR level for the putative CA/OR/WA humpback whale stock is difficult to understand given that the California-Oregon feeding group as defined in this SAR includes nearly all of the Central American distinct population segment, which was estimated to include 411 whales. The MMPA defines the term “population stock” or “stock” as a “group of marine mammals of the same species . . . that interbreed when mature.” Because the Central American DPS does not interbreed, they assert it should be considered a separate stock. The PBR level should be calculated using a minimum abundance estimate for the Central American DPS, not a coast-wide abundance estimate, and a recovery factor for an endangered species with less than 500 animals.

Response: As noted in our response to Comment 4, we are currently in the process of reviewing stock structure under the MMPA for all humpback whales in U.S. waters, following the change in ESA listing for the species in 2016, to determine whether we can align the stocks with the DPSs under the ESA. Thus, we have not yet designated new stocks of humpback whales along the U.S. west coast, despite new information on DPSs that the commenter notes. Once we have completed our review, any changes in

stock delineation or MMPA section 117 elements (such as PBR) will be reflected in future stock assessment reports. The noted increase in the PBR for the CA/OR/WA humpback whale stock resulted from a higher estimate of abundance compared with a previous version of the SAR and the continued aggregation of multiple DPSs into one recognized stock.

Comment 74: CBD-HSUS-WDC suggest NMFS provided insignificant justification in the CA/OR/WA humpback whale SAR in switching from using the Darroch model, which was used to estimate abundance in prior stock assessment reports, to the Chao model. In the report, NMFS states that the Chao “estimate is considered the best of those reported by Calambokidis *et al.* (2017a) because it accounts for individual capture heterogeneity,” but that does not explain why NMFS chose it this year and not others when it has been available over the same time period of the Darroch model. The Chao model accounted for individual capture heterogeneity in prior years too, when NMFS instead chose the Darroch model as the best estimate of abundance. Figure 2 in the SARs indicates that data used in both the Darroch and Chao models are from approximately the same time period. CBD-HSUS-WDC request NMFS explain why it was not until this year that it used the model that gives higher abundance estimates, per Calambokidis *et al.* (2017a). This is especially important in order to justify the increase by half in the minimum population estimate (a change from 1,876 animals to 2,784 animals).

Response: The Chao estimate from Calambokidis *et al.* (2017a) as stated, accounts for capture heterogeneity and results in an estimate of approximately 2,400

whales with a CV of 0.03. This is the most precise Chao estimate reported from Calambokidis *et al.* (2017a) and it has a CV closest to the most recent Darroch estimate (Table 3 of Calambokidis *et al.* 2017a). While the Darroch estimates generally have better precision, they do not account for capture heterogeneity, and this was considered in the most recent SAR. Given the nearly-equal CVs for the latest Chao and Darroch estimates (0.03 versus 0.01 respectively), the model with the best ability to account for capture heterogeneity was chosen for the 2018 revision. In the previous SAR, the model with the lowest CV was chosen, while capture heterogeneity was largely ignored. In retrospect, we acknowledge more consideration of the strength of the competing models, especially regarding capture heterogeneity, was warranted. When sufficient data are available from mark-recapture estimates, it is advisable to use models that account for capture heterogeneity and we reevaluated this in the 2018 SAR. We also note that estimates from the Chao model are more similar to independently-derived line transect estimates of approximately 3,000 humpback whales reported by Barlow (2016). The commenter may also note that a Chao model mark-recapture abundance estimate has been used in the SAR for the Eastern North Pacific blue whale since 2013. The use of Chao estimates for both humpback and blue whale stocks is now more logically-consistent.

Comment 75: CBD-HSUS-WDC suggest that the CA/OR/WA humpback whale report should at a minimum discuss what the PBR level might be if the stock were appropriately defined to be consistent with the DPS identified. As an example from elsewhere in the SARs, in the case of the Central North Pacific stock, the stock

assessment report says “Just for information purposes, PBR calculations are completed here for the feeding aggregations.” It then continues by saying “If we calculated a PBR for the Southeast Alaska/northern British Columbia feeding aggregation, it would be . . .” CBD-HSUS-WDC note these hypotheticals are important for stakeholders, including managers, to understand the status and population abundances of humpbacks when appropriate DPSs are used. NMFS has declined to consider public comment on potential management actions that contain calculations of PBR that are not in the stock assessment reports. They maintain this makes it pressing for the stock assessment reports to give as much information as possible prior to a future stock revision.

Response: See response to Comments 4 and 73.

Comment 76: CBD-HSUS-WDC request that NMFS clarify and correct the calculations of humpback whale serious injury and mortality in the sablefish fishery. They suggest the stock assessment report should apportion some humpback whale serious injuries and mortality in unidentified gear to the sablefish fishery, as required by the biological opinion for the fishery. Specifically, the biological opinion requires that “a portion of unidentified whale and gear entanglements would be counted against these take limits . . . in addition to known humpback whale entanglements in gear of the proposed fishery.” It also says that data “used to pro-rate unidentified whale and gear entanglements will be updated each year.” CBD-HSUS-WDC urge NMFS to include these data and calculations in the stock assessment report.

Response: There is currently no model available for assigning unidentified fishery interactions to specific fisheries. There are ongoing analyses in progress to see if this will

be possible; but, thus far, the results have not been promising due to lack of sufficient sample sizes of known-gear cases used for model construction.

Comment 77: CBD-HSUS-WDC points out that the stock assessment report's serious injury and mortality for humpback whales in the sablefish fishery are lower than the five-year average in the NMFS report "Marine Mammal Mortality in U.S. West Coast Groundfish Fisheries (2002-2016)." This report says that 4 humpback whales were entangled in sablefish fishery from 2012-2016, but the stock assessment report says that 2.5 were entangled. It is not clear why there is a discrepancy.

Response: We note that the draft humpback whale SAR was prepared months before the release of the cited report, and we have updated the final SAR with the estimates in the cited report.

Comment 78: CBD-HSUS-WDC recommend the CA/OR/WA humpback whale report should address the determination that NMFS made as to whether or not to convene a take reduction team for fisheries that are known to entangle humpback whales along the west coast. The draft report proposes to insert a sentence that discusses stakeholder processes in California, Oregon, and Washington. This does not indicate whether NMFS has evaluated the CA/OR/WA stock of humpback whales since 2015, when it was a lower priority compared to other marine mammal stocks and fisheries for establishing take reduction teams. NMFS should identify in the report when it most recently evaluated whether CA/OR/WA humpback whales were the highest priority for a take reduction team. This would address the Pacific SRG's recommendation that NMFS convene a TRT.

Relying on an evaluation in 2015 ignores both the listing of the DPSs and the impact of most of the recent entanglements.

Response: SARs by definition include the best available science for assessing marine mammal stocks. Deciding whether to convene a TRT is a management determination that is outside the scope of a stock assessment and is therefore not included in a SAR.

Comment 79: The Makah Tribe comments that CA/OR/WA humpback whale stock does not represent a stock of humpback whales under the definition of a stock under the MMPA; the listing of humpback whales together from CA/OR/WA is for management purposes and is best characterized as a mixed-stock assemblage. The SAR should provide PBR estimates for each stock (Mexico DPS, Central America DPS, and Hawaii DPS) that occur in the management area. The SAR could also report a separate PBR for the two feeding groups within the management area (Washington-Southern British Columbia and Oregon-California) in order to better inform management decisions and assess localized impacts. The Makah Tribe notes these changes would allow a more thorough evaluation of how human impacts affect humpback whale stocks. If photo-identification allows separation of a whale to one or another stock, then that data should be used. If photo-identification is not available, then the mortality or serious injury should be proportionally assigned to the stocks based on the occurrence of those stocks within the feeding area.

Response: See response to Comments 4 and 73.

Comment 80: The Makah Tribe recommends the calculation for PBR needs to be changed for the CA/OR/WA stock of humpback whales. The PBR calculation used has 8 percent for R_{max} . NMFS scientists published a paper in 2010 using life history tables to evaluate what the maximum rate of increase is for humpback whales. They concluded, “It is proposed that the upper 99 percent quantile of the resulting distribution of the rate of increase (ROI) for Approach B (11.8 percent/year) be established as the maximum plausible ROI for humpback whales and be used in population assessment of the species.” (Zerbini *et al.* 2010). It is unclear why NMFS has chosen to use 8 percent, which is rate that population has increased at, rather than using the R_{max} for the population as is required in the PBR calculation. The observed rate of increase of 8 percent may be less than the true R_{max} of the population because the population size was greater than abundance at which R_{max} occurs.

Response: We agree with the comment that the observed ROI may be lower than the theoretical R_{max} for this population. However, Zerbini *et al.* (2010) note that “we emphasize that such a high figure can be observed only with extreme and very optimistic lifehistory parameters.” The estimated R_{max} reported by Zerbini *et al.* (2010) also includes life history data from other ocean basins where reported rates of increase were much higher, for example southern hemisphere populations that were recovering from intense whaling. The GAMMS (NMFS 2016) also states that “Default values should be used for R_{max} in the absence of stock-specific measured values.” There is a stock-specific estimate of R_{max} based on mark-recapture abundance estimates from a recovering population of humpback whales in the California Current and that estimate is

8 percent as outlined in the SAR. While we acknowledge that this area likely includes multiple stocks of humpback whales, 8 percent is currently the best estimate of humpback whale R_{max} for this ocean region.

Comment 81: The Makah Tribe recommends NMFS reconsider the assumption about what proportion of time the CA/OR/WA humpback whale stock spends in U.S. waters. NMFS has assumed that whales of the CA/OR/WA stock only spend 50 percent of the year in U.S. waters without any justification. The Makah Tribe thinks the estimate should be increased for two reasons. First, many of the whales of the CA/OR/WA stock winter in Hawaii and thus only leave U.S. waters during the short period of the year when they are migrating between wintering and feeding grounds. Second, in Washington, humpback whales feed from late April through December, roughly 8 months. Some of the whales even appear to spend the entire winter in Washington rather than migrating to wintering grounds. They suggest the proportion of time spent in U.S. waters would be easiest to address using the assumption above of reporting separate PBRs for each of the stocks within the mixed-stock management area.

Response: The comment incorrectly implies that many of the humpback whales that feed off of the U.S. west coast winter in Hawaii. The 2018 SAR states: “Along the U.S. west coast, NMFS currently recognizes one humpback whale stock that includes two separate feeding groups: 1) a California and Oregon feeding group of whales that belong to the Central American and Mexican distinct population segments (DPSs) defined under the ESA (NOAA 2016a), and 2) a northern Washington and southern British Columbia feeding group that primarily includes whales from the Mexican DPS but also includes a

small number of whales from the Hawaii and Central American DPSs (Calambokidis et al. 2008, Barlow et al. 2011, Wade et al. 2016)." NMFS agrees that further work is needed to refine estimates of time spent in U.S. waters by the various DPSs that utilize the California Current.

Humpback whales - Mexican DPS and Central American DPS

Comment 82: Oceana notes the best available information on entanglement, injury, and mortality of humpbacks off the U.S. west coast indicates that risks to the stock from entanglement in fishing gear have significantly increased and comment that recent information was not considered in the stock assessment report.

Response: The CA/OR/WA humpback whale SAR states in the Fishery Information section that "Pot and trap fisheries fishery entanglements are the most commonly documented source of serious injury and mortality of humpback whales in U.S. west coast waters (Carretta et al. 2013, 2015, 2016a, 2018a), and entanglement reports have increased considerably since 2014."

Comment 83: Oceana suggests that as humpback whales in the U.S. west coast stock, a strategic stock under the MMPA due to its ESA listing, were recently split into two DPSs, it is imperative that the SARs assign serious injuries and mortalities to each DPS, and establish PBR levels accordingly. Oceana is concerned that aggregating the much more critically endangered Central American DPS along with a much more numerous Mexico DPS into a single PBR may obscure and underestimate impacts to the Central American DPS.

Response: See response to Comments 4 and 73.

Comment 84: Oceana expresses concern that NMFS is not taking sufficient action for the CA/OR/WA humpback whale stock to reduce whale entanglement levels to below PBR and ultimately to levels approaching zero. While they understand NMFS' approach has been to rely on state working groups to develop programs like California's Risk Assessment and Mitigation Program, to date, NMFS has not indicated to the state of California or the Dungeness Crab Fishing Gear Working Group what actions and outcomes are necessary to permit the fishery to operate under the MMPA or ESA.

Response: The States of California, Oregon, and Washington have indicated an intention to apply for an ESA section 10(a)(1)(B) Incidental Take Permit (ITP) for their fisheries that entangle protected species. We will be working closely with those states on the development of their applications and associated Conservation Plans for that permitting process. A successful application for an ESA ITP requires that the applicant minimize the impact of their incidental take to the maximum extent practicable (among other requirements) and NMFS must make both a "not likely to jeopardize" finding under the ESA and a "negligible impact" finding under the MMPA in order to issue such permits. As a result, we expect that the development process for both permits would include discussions of the actions and outcomes necessary to permit the incidental take from the actions under the ESA and MMPA.

Comment 85: Oceana also notes that humpback whale entanglement data from NMFS indicates higher levels of entanglements in 2017 (31 confirmed) and 2018 (27 confirmed) than in 2012 and 2013, and suggest the 5-year average level of M/SI would be higher if the SAR used the most recent 5-year period. In addition, the estimates of

human-caused M/SI for all whales do not account for unreported entanglements, which could result in a serious underestimation of total M/SI and the associated determination whether M/SI is above or below PBR. NMFS has scientifically reliable means of estimating potential total entanglement numbers. According to NMFS Tech Memo (Saez *et al.* 2013), the authors applied a 10 percent reporting rate for all whale species on the U.S. west coast to produce an estimate that “an average of 103 whale entanglements per year may be occurring, with 93 unobserved and undocumented with their ultimate fates unknown.” This is based on a study where “The number of reported entangled whales was estimated to be only 10 percent of the actual number of whales entangled (Robbins and Mattila, 2004).” However, in the SAR, the estimates of total fishing-induced M/SI only include reported entanglements for which M/SI was determined.

Response: We note the SARs utilize the most recent 5-years of data that have been analyzed and vetted when preparing the draft reports. We will include newer data in the appropriate future reports. Values for entanglement reporting rates cited (Saez *et al.* 2013) are taken from U.S. east coast studies and are not representative of U.S. west coast data. There currently are no estimates of the total number of undetected entanglements in this region.

Comment 86: Oceana comments the SAR estimates of whale entanglement are based on an incorrect assumption that zero M/SI events occur from entanglements that are not reported. They note NMFS acknowledges that the number of unreported entanglement events – and thus the number of M/SI events – is well above zero and has estimated that the actual number of entanglements is ten times the observed number.

Oceana stresses the importance of incorporating some estimate of unobserved M/SI numbers for understanding the true level of risk to each stock. They request that NMFS provide an estimate of the reporting rate for whale entanglements, particularly for humpback, blue, fin, and gray whales and use the estimate to provide a total annual fishing mortality for these whales to reflect the best available science.

Response: See response to Comment 85.

Comment 87: Oceana requests NMFS take appropriate actions to reduce whale entanglements and ship strikes, as each of these human-threats is individually exceeding PBR, and the cumulative mortality is over double PBR.

Response: See response to Comment 84. We acknowledge the comment and note it is outside the scope of the SARs, but we are actively working on this topic with our partners, such as state agencies and marine shipping companies to reduce the ship strike risk in U.S. waters (see our webpage at

<https://www.fisheries.noaa.gov/insight/understanding-vessel-strikes> on the subject).

Fin whale - CA/OR/WA

Comment 88: CBD-HSUS-WDC suggest the report for CA/OR/WA fin whales should be updated to reflect the 2015 interaction with the Hawaii shallow-set longline in the northeastern fishing area (namely, closer to the west coast EEZ) and specify whether this vessel was Hawaii or California-based.

Response: There are no estimates of fin whale abundance on the high seas outside of the Hawaii or U.S. west coast EEZs; thus, PBR and human-caused mortality is assessed for those records that occur within the U.S. EEZ. The GAMMS (NMFS 2016) note that

“If estimates of mortality or abundance from outside the U.S. EEZ cannot be determined, PBR calculations should be based on abundance within the EEZ and compared to mortality within the EEZ.” The 2015 entanglement was determined to be a non-serious injury (Bradford 2018) and because it occurred outside the U.S. EEZ, it is not included in the stock assessment report for the CA/OR/WA stock of fin whales. The stock of fin whales for which this entanglement should be assigned to is unknown; but, based on the location, we have updated the text in the final 2018 CA/OR/WA fin whale SAR to better inform the reader of potential fishery risks to this particular stock.

Comment 89: CBD-HSUS-WDC comment that the Pacific SARs do not regularly include appendices with relevant and timely fisheries information. They note updated information on interactions in longline fisheries is important especially as the number of longline vessels has increased drastically since 2008 in California. Eighteen Hawaii-permitted vessels landed swordfish and tuna in California in 2016. Stakeholders, including federal fisheries managers, need the stock assessment reports to accurately represent marine mammal interactions occurring in the Hawaii longline fisheries in order to assess the risk to marine mammals in the California Current. Further, it is not easy to find information on interactions with the California-based shallow-set longline fishery in the Pacific or Alaska SARs and suggest the interaction rates of the California-based shallow-set longline fishery should be included in the appendices, if not directly in the SARs.

Response: We produce summaries of marine mammal interactions in the longline fisheries in the Pacific region (*e.g.*, Bradford 2018). Updating the fishery description

appendices sometimes takes a lower priority in the SAR preparation process due to the increasing workload involved in SAR preparation. We will strive to produce more timely updates to these fishery description sections in future SARs.

Risso's Dolphin - CA/OR/WA

Comment 90: CBD-HSUS-WDC encourage NMFS to investigate Risso's dolphin interactions in the California market squid fishery via electronic monitoring (video). They reference a video of a purse seine encircling marine mammals in Monterey Bay was published on YouTube on April 25, 2018, and suggest this type of interaction, which may not occur with observers on board and may not be self-reported, could be captured via electronic monitoring. CBD-HSUS-WDC suggest NMFS acknowledge in the stock assessment reports that interactions in this fishery do currently occur.

Response: This particular SAR was not revised in 2018, and we take note that interactions with this purse seine fishery should be updated the next time the SAR is revised. Past interactions with the squid purse seine fishery are detailed in the last revision of this SAR.

Killer whale - Eastern North Pacific Southern Resident

Comment 91: CBD-HSUS-WDC comment that although some updates were included on basic information about killer whale populations in the Eastern North Pacific, additional changes should be made to update terminology, distribution, and stock differentiation information in the southern resident killer whale (SRKW) report. They note that the tracked changes made in the introduction to the Eastern North Pacific Offshore killer whale SAR align with their requested changes for the SRKW SAR

introduction, particularly the clarification of different types of killer whales as “ecotypes” instead of “pods” and updated genetic differentiation. For more recent background information and consistency among SARs, CBD-HSUS-WDC suggest that NMFS apply the same updates to the SRKW SAR. In addition, they suggest that NMFS update terminology referring to the three pods in the SRKW population from J1, K1, and L1 to J, K, and L, as the alphanumeric designations refer to individuals, not pods.

Response: We acknowledge the comment and have made the suggested changes in the final 2018 SRKW report.

Comment 92: CBD-HSUS-WDC comment while NMFS includes some updated information on the distribution of SRKWs outside the inland waters of Washington state and southern British Columbia (the Salish Sea), they disagree with the SAR’s statement that the coastal habitat of SRKWs is still uncertain, when more recent recovery documents and status updates thoroughly describe how this population uses coastal habitat. They suggest NMFS use updated research from multiple tagging studies, passive acoustic recording, and monitoring from vessel cruises to update the the use of coastal habitat in the SRKW SAR. In addition, they comment that recent research published by Canada’s Department of Fisheries and Oceans establishes SRKW presence off southern Vancouver Island, which resulted in expanded critical habitat in Canadian waters. They suggest this information should also be included in the SAR and used to update the information about coastal habitat use in Canada by the SRKWs.

Response: The SAR states “The complete winter range of this stock is uncertain.” While there has been substantial new information acquired in recent years on the

occurrence of this population in coastal waters, the complete winter range of the population is still unknown. The SAR describes what is known of the range in the Stock Definition and Geographic Range section and the range map provides readers with information on the known range of the stock.

Comment 93: CBD-HSUS-WDC comment that the Center for Whale Research conducts the annual census for the SRKWs and typically provides updates on July 1st and December 31st of each year. They suggest this allows enough time for NMFS to reflect a more recent census report in the SRKW report using numbers reported on July 1st in the same year as the SAR. Using census numbers from July 1, 2017, reflects population abundance more than a year and a half out of date, which is unnecessary for a population as small and as closely monitored as the SRKWs. As of July 1, 2018, the SRKW population consisted of 75 individuals.

Response: The Center for Whale Research is under contract to NMFS and provides a population estimate on July 1st of each year. Since the beginning of the Center for Whale Research's study in 1976, July 1st was used as the date for the population estimate. Although additional effort in the fall months in recent years has occasionally allowed for a population estimate of December 31st, for some years sighting data of all three pods may not exist for most or all of the fall months. For the sake of consistency, we will continue to use the census data from July 1st. We do provide an update to the SRG at their annual meeting of any changes (births/deaths) since the SAR was filed.

Comment 94: CBD-HSUS-WDC recommend NMFS add a description in the SRKW report of the "current population trend, including a description of the information

upon which [it is] based,” as required by the MMPA. The SAR describes the past trends and provides the 2017 number of animals (77) but does not specify the current trend. The population of SRKW has now dropped to 74 animals, its lowest point in 34 years, and it is continuing to decline. In 2014, a population viability study estimated that under status quo conditions, the SRKW growth rate was a 0.91 percent annual decline, meaning it would reach an expected population size of 75 in one generation (or by 2036). This abundance was reached in mid-2018. Its current growth rate is just half of the previous estimate described by a 2012 international panel review.

Response: The SAR states: “Following the peak census count of 99 animals in 1995, the population size has declined and currently stands at 77 animals as of the 2017 census.” This is the lowest number since 1995 and is based on data from the annual census, and is considered a declining trend. The inclusion of the 2018 census data, 74, does not change this trend. The SAR language as stated is sufficient to describe the current trend.

Comment 95: CBD-HSUS-WDC comment that growth rates and productivity in different Resident killer whale populations may be affected by variability in diet, environmental conditions, and habitat range. These different environmental conditions, including prey availability, pollution, and disturbance levels may impact their resulting annual growth rate. To better reflect the habitat conditions of SRKWs and the resulting maximum net productivity, CBD-HSUS-WDC suggest that NMFS use the same growth rates and estimated net productivity rates as are used for Northern Resident killer whales. They suggest this population is closer to SRKWs in prey availability and environmental

conditions, and shares a similar history in exploitation for captive display. If NMFS does not make the change to maximum net productivity rate, we request that NMFS update the estimate for PBR to reflect the update to population size. With a population of 77 individuals and a calculated PBR of 0.13, NMFS should also update the estimate of “1 animal every 7 years” to “1 animal every 8 years.”

Response: We will evaluate other maximum rates of increase for killer whale populations and consult with the Pacific SRG regarding potential changes to the SAR moving forward. We will retain the currently-used R_{max} value from the published study of Matkin *et al.* (2014) in the final 2018 SAR. The retention of the current R_{max} value results in no appreciable difference in the calculated PBR compared with the R_{max} value proposed by the commenter.

Comment 96: CBD-HSUS-WDC comment in the “Human-caused mortality and serious injury” section of the SRKW SAR, NMFS notes a lack of fishery-related stranding information for killer whales in Canadian waters. However, a 2014 report of a juvenile Northern Resident killer whale (I103) being entangled in a gillnet is documented and included in Canada’s updated Recovery Strategy for killer whales. Although the whale was quickly released from the net, he/she died the following winter. Given the biological similarities between Northern Resident killer whales and SRKWs, including a preference for Chinook salmon, a similar risk of interaction exists and CBD-HSUS-WDC recommends this example of a potential occurrence should be noted in the SAR.

Response: We have added this information to the final 2018 SAR.

Comment 97: CBD-HSUS-WDC disagree with NMFS that the total non-fishery human-caused mortality for the SRKW stock for the past five years (2012-2016 or 2013-2017) is zero. NMFS notes in this SAR the death of a young adult male, L95, from a fungal infection introduced by a satellite tag. While the infection was determined to be the cause of death for L95, they argue that human activity exacerbated this infection and contributed to the introduction of the fungus into L95's bloodstream, hastening his death. Additionally, CBD-HSUS-WDC recommend the death of J34, from blunt force trauma, should be included as another human-caused mortality and attributed as vessel strike mortality. For a population in a highly vulnerable state, deaths with a high likelihood of being caused by human activity should be noted as such.

Response: We acknowledge the uncertainty of such cases in the "Other Mortality" section of the SAR and include past documentation of a vessel strike death of a southern resident killer whale from 2006. We have added language to the SAR that acknowledges that undetected or unclassified human-related mortality and injury may occur in the population.

Comment 98: CBD-HSUS-WDC notes that the "Habitat Issues" section in the SARs is intended by the MMPA to cover "other factors that may be causing a decline or impeding recovery of the stock, including effects on marine mammal habitat and prey." Thus, they request that NMFS reflect the level of research that has established the preference for Chinook salmon of SRKWs and remove the phrase "appears to be" in noting that SRKWs are Chinook salmon specialists. They also disagree with the inclusion of pink salmon in the list of other species in their diet, as the paper cited (Ford *et al.*

2016) finds that pink salmon are present in proportions of less than 0.01 in fecal samples from SRKWs. Additionally, CBD-HSUS-WDC recommend that NMFS elaborate on its note that “changes in Chinook abundance have affected this population,” to include updated information on the impact of human activity (*e.g.* harvest, vessel disturbance, and habitat modification) on the availability of SRKW prey as well as the significant impact prey abundance has on SRKW body condition, nutritional stress, fecundity, and survival.

Response: We have elaborated on the published links between lower Chinook salmon availability and lower population fecundity of southern resident killer whales in the final SAR.

Comment 99: CBD-HSUS-WDC comment that with respect to harvest impacts, NMFS has acknowledged elsewhere that the harvest of salmon (in particular Chinook) can result in harm to SRKWs by “reducing prey availability, which may cause animals to forage for longer periods, travel to alternate locations, or abandon foraging efforts.” Ocean and inland fisheries harvest fish from priority stocks of Chinook salmon that the orcas target. Scientists have estimated that ocean fisheries alone reduce Chinook abundance by 18-25 percent. This is significant to the Southern Residents, as shown by Lacy *et al.* (2017), which projected that a “50 percent noise reduction plus a 15 percent increase in Chinook would allow the population to reach the 2.3 percent growth target” needed for recovery. They suggest that NMFS include updated information on toxic contamination and potential impacts in this section.

Response: See response to Comment 98 regarding Chinook prey availability.

With regard to contaminants, we are analyzing data collected via biopsy samples, which will add to the body of knowledge on contaminants published by Krahn *et al.* (2007, 2009) which is currently cited in the SAR.

Gray whale - Eastern North Pacific

Comment 100: The Makah Tribe comments that the “Stock Definition and Geographic Range” section of the Eastern North Pacific (ENP) gray whale SAR should be updated to improve accuracy and clarity and to reflect current, best available science, particularly in the discussion about the Pacific Coast Feeding Group (PCFG). They recommend the SAR be changed to reflect the PCFG abundance estimate is “approximately 240,” as indicated in the Population Size and Minimum Population Estimate sections, rather than the outdated estimate from Calambokidis *et al.* (2014).

Response: We have updated the “Stock Definition and Geographic Range” section in the final SAR to omit the reference to the number of whales in the PCFG. Abundance estimates are addressed in the “Population Size” section and are limited to those animals within the IWC-defined region detailed in the SAR.

Comment 101: The Makah Tribe comments NMFS should not use a lower recovery factor for PCFG gray whales but should use the same recovery factor of 1.0 as used for ENP whales. They state the best available science, as developed by the IWC’s range-wide review over an intensive five-year evaluation of stock structure hypotheses for all north Pacific gray whales, indicates that the PCFG is not separate from the ENP stock, and the recovery factor for PCFG whales should be 1.0 because they are ENP gray

whales. Even if NMFS disagrees that PBR for the PCFG should be calculated based on a recovery factor of 1.0, the Makah Tribe suggests the recovery factor should at least be increased to 0.75 to reflect the continuing population growth of the PCFG as reflected in the most recent abundance estimate through 2015 (Calambokidis *et al.* 2017b). The Makah Tribe reiterates their comments on the 2014 draft SAR for ENP gray whales for increasing the recovery factor of the PCFG above the default value for stocks of unknown status due to a stable abundance trend and the already conservative effect of calculating PBR for a feeding aggregation.

Response: We have the flexibility to set recovery factors that reflect considerations other than population trends. The GAMMS state that “Recovery factors of 1.0 for stocks of unknown status should be reserved for cases where there is assurance that N_{min} , R_{max} , and the estimates of mortality and serious injury are unbiased and where the stock structure is unequivocal.” (NMFS 2016). This PCFG is small in size and the estimated M/SI is based on minimum counts of observed cases. Thus, the M/SI is not unbiased, it is negatively-biased. This, in combination with the small size of the feeding group, warrants a smaller recovery factor until that time the population dynamics of the PCFG can unequivocally be determined. A goal of the MMPA is to maintain populations as functioning elements of their ecosystem, thus use of a more conservative recovery factor is consistent with a small feeding group that has a restricted geographic range.

Comment 102: The Makah Tribe suggests that the “Human-Caused Mortalities and Serious Injury” section of the ENP gray whale report, the PCFG mortalities and serious injuries should be added to the total for mortalities and serious injuries of the

ENP stock to accurately report the total number of human-caused mortalities of the ENP gray whale stock. Currently, mortalities and serious injuries are treated as mortality to two separate stocks, although the SAR states that NMFS does not consider the PCFG a stock, but is included as a part of the ENP.

Response: We have revised the “Human-Caused Mortalities and Serious Injury” section of the ENP gray whale report to clarify that such estimates of anthropogenic impacts for PCFG whales are a component of the estimates for the overall ENP stock.

Comment 103: The Makah Tribe suggests that the section on “Subsistence/Native Harvest Information” be updated to reflect the IWC’s approval of a new gray whale catch limit covering the period 2019 through 2025 at the 2018 biennial meeting. The new catch limit of up to 140 strikes annually is an overall increase; and, while it does not affect the number of whales potentially available to the Makah Tribe if its waiver request is approved, the important changes in the gray whale catch limit should be included in the new SAR. The Makah Tribe has concerns about the last sentence of this section, which reports on the total number of gray whales harvested in aboriginal subsistence hunts over a 32-year period from 1985 to 2016. They point out the SAR already includes values from aboriginal harvests for the relevant five-year period 2012-2016 and does not need the value reported from the longer period. The sentence should be removed because it serves no function in the SAR. If NMFS decides to retain the sentence, they suggest appropriate context should be added, including the abundance trend of ENP gray whales over the same time, the current abundance estimate for the stock, and representative PBR

values over the period, which demonstrate that the average annual removals are a fraction of the calculated PBR and are thus sustainable.

Response: We have updated the aboriginal subsistence quota in the final SAR based on the 2018 IWC meeting. We disagree that historical subsistence takes of gray whales reported in the SAR are unnecessary to report. They serve to inform the public of the history of takes in recent decades, and the values implicitly support the assertion that aboriginal takes have been sustainable, in light of the population trend data shared in the SAR. We have added a sentence to this section noting that the size of the ENP population has grown during this same period.

Gray whale - Western North Pacific

Comment 104: The Makah Tribe comments the title for the Western North Pacific (WNP) gray whale SAR should be changed. The term “Western North Pacific” gray whale was previously used by NMFS for the continued listing under the ESA of an isolated gray whale population that both feeds and winters off the coast of Asia. The fact that a substantial percentage of the whales described in the “Western North Pacific” SAR migrate through U.S. waters, and not along the coast of Asia to wintering grounds off of Asia, shows that the whales represented in the SAR are a different group of whales than the isolated population previously considered to be “Western North Pacific” gray whales. The SAR makes it clear that the Sakhalin Island feeding area is made up of a mixed stock aggregation of whales that migrate to wintering grounds off Asia and whales that migrate through U.S. waters to wintering grounds off North America. The Makah tribe suggests that because only the former population represents the historic “Western North Pacific”

stock, the title of the SAR should be changed to “Western Feeding Group Gray Whales” to reflect that the latter group of whales analyzed, *i.e.*, those that migrate to U.S. waters and thus must be evaluated in a SAR under the MMPA, are members of a feeding group of eastern breeding animals but are unlikely to be the whales that historically existed only in Asian waters and which remain listed as endangered under the ESA.

Response: We responded to a similar comment on the 2014 version of this report (see 80 FR 20502, August 20, 2015). The current SAR notes that whales seen near Sakhalin may include a mixture of ENP animals feeding in this region, in addition to WNP whales. There is no evidence to indicate that the WNP stock of gray whales is extinct, as implied by the commenter (see Comment 105). Evidence continues to support an extant WNP population as reported in Brüniche-Olsen *et al.* 2018.

Comment 105: The Makah Tribe comments the WNP gray whale SAR should include a description of Cooke (2015), which provided a quantitative estimate of the percentage of whales that feed off Sakhalin Island and migrate to wintering grounds off North America. The results of Cooke’s analysis – that whales representing 37 to 100 percent of Sakhalin feeding whales could be migrating to North America – is essential to the context for this SAR. That a high percentage of – and possibly all – Sakhalin whales may in fact migrate to North America rather than solely along the Asian coast raises significant questions about the identity of those whales migrating east rather than south, the potential that the historic “Western North Pacific” stock is extinct, and the stock status and ESA-listing status of the Sakhalin whales that do migrate to North America as separate from the historic “Western North Pacific” stock. Citation to Cooke (2015) is also

appropriate because the SAR identifies the proportion of the stock that uses U.S. EEZ waters in the Potential Biological Removal section. Cooke (2015) is clearly relevant to that determination and should be discussed.

Response: The Cooke (2015) paper is discussed in this context in the “Stock Definition and Geographic Range” section of the SAR.

Comment 106: The Makah Tribe comments the IWC’s range-wide review represents the most recent and best available scientific information on questions of gray whale stock structure. While the SAR mentions the five-year review process, it would be much more informative if it were to discuss the stock structure hypotheses currently considered by the IWC to be most plausible for gray whales. It is notable that in the two hypotheses considered most plausible by the IWC (3a and 5a), the whales migrating to North American wintering grounds from feeding grounds in the Okhotsk Sea are considered the Western Feeding Group of the ENP gray whale stock. In only one hypothesis (6b), which was considered to have lower plausibility by the IWC, would whales from the Sakhalin Island feeding area include Western Breeding Stock (*i.e.*, the historic “Western North Pacific” stock) animals that utilize wintering grounds in North America without fidelity to wintering grounds in either North America or Asia. The Makah Tribe suggests adding a detailed discussion and analysis of the IWC range-wide workshop’s stock structure hypotheses.

Response: We have added text to the final SAR to reflect the two most plausible hypotheses put forward by the IWC. It is important to note that these represent hypotheses, which do not equate to best available science used in a SAR. Genetic studies

of gray whales in the North Pacific provide the best available science for the conclusion that the Western North Pacific population of gray whales is extant, though likely very small.

Comment 107: The Makah Tribe recommends the WNP gray whale SAR should more accurately reflect the conclusion of Cooke *et al.* (2017) regarding whether the combined Sakhalin-Kamchatka feeding aggregation is a closed population.

Response: We have updated the final SAR with text taken directly from Cooke *et al.* (2017) that better addresses the uncertainty and conclusions: “We conclude that the Sakhalin feeding aggregation is probably not genetically closed but that the Sakhalin and Kamchatka feeding aggregations, taken together, may be genetically closed. However, genetic data from Kamchatka would be required to confirm this.”

Harbor seal – California

Comment 108: One commenter pointed out that the California harbor seal SAR was not updated in 2018 though well overdue.

Response: This comment deals with a SAR that was not revised in 2018. The most recent abundance estimate for this stock is based on data collected in 2012, and the SAR was revised in 2014. No new information on the population size of this stock is currently available that warrants a revision of the report.

False Killer Whale – Hawaiian stocks

Comment 109: The Hawaii Longline Association notes that NMFS has proposed no revisions to the 2018 SAR for the Hawaii false killer whale stocks and asks NMFS to provide an explanation in its responses to comments.

Response: We reviewed available data for all three Hawaii false killer whale stocks, and there was no new information that would change the status of any of the three stocks discussed within the SAR. Therefore, we did not update the False killer whale Hawaiian Islands Stock Complex SAR in 2018.

Dated: June 13, 2019.

Donna S. Wieting,
Director, Office of Protected Resources,
National Marine Fisheries Service.

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